

ProductID: ASVAB

ASVAB Secrets

Study Guide

Your Key to Exam Success

ASVAB Test Review for the
Armed Services Vocational
Aptitude Battery



Effective,
Affordable
Help from the
*World's Most
Comprehensive
Test Preparation
Company™*

Published by
Morrison Media LLC

Dear Future Exam Success Story:

Congratulations on your purchase of our study guide. Our goal in writing our study guide was to cover the content on the test, as well as provide insight into typical test taking mistakes and how to overcome them.

Standardized tests are a key component of being successful, which only increases the importance of doing well in the high-pressure high-stakes environment of test day. How well you do on this test will have a significant impact on your future- and we have the research and practical advice to help you execute on test day.

The product you're reading now is designed to exploit weaknesses in the test itself, and help you avoid the most common errors test takers frequently make.

How to use this study guide

We don't want to waste your time. Our study guide is fast-paced and fluff-free. We suggest going through it a number of times, as repetition is an important part of learning new information and concepts.

First, read through the study guide completely to get a feel for the content and organization. Read the general success strategies first, and then proceed to the content sections. Each tip has been carefully selected for its effectiveness.

Second, read through the study guide again, and take notes in the margins and highlight those sections where you may have a particular weakness.

Finally, bring the manual with you on test day and study it before the exam begins.

Your success is our success

We would be delighted to hear about your success. Send us an email and tell us your story. Thanks for your business and we wish you continued success-

Sincerely,

Morrison Media Support Team

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Secret Key #1 – Time is Your Greatest Enemy

To succeed on the ASVAB, you must use your time wisely. Most test takers do not finish at least one section. The time limits are presented in the table below:

SECTION	Total amount of time allotted	Number of questions	Time to answer each question
General Science	11 min	25	.44 min
Arithmetic Reasoning*	36 min	30	1.2 min
Word Knowledge*	11 min	35	.31 min
Paragraph Comprehension*	13 min	15	.87 min
Auto and Shop Information	11 min	25	.44 min
Mathematics Knowledge*	24 min	25	.96 min
Mechanical Comprehension	19 min	25	.76 min
Electronics Information	9 min	20	.45 min

*These sections are the only sections that contribute to your AFQT score, and your AFQT score determines if you are eligible to enlist in the Armed Forces. Note: Until recently, "Numerical Operations" and "Coding Speed" were also administered on ASVAB, but have been dropped.

Arithmetic Reasoning - Measures ability to solve arithmetic word problems

Word Knowledge - Measures ability to select the correct meaning of words presented in context, and identify synonyms

Paragraph Comprehension - Measures ability to obtain information from written material

Mathematics Knowledge - Measures knowledge of high school mathematics principles

As you can see, the time constraints are brutal. To succeed, you must ration your time properly. The reason that time is so critical is that every question counts the same toward your final score. If you run out of time on any paragraph, the questions that you do not answer will hurt your score far more than earlier questions that you spent extra time on and feel certain are correct.

Success Strategy #1

Pace Yourself

Wear a watch to the ASVAB Test. At the beginning of the test, check the time (or start a chronometer on your watch to count the minutes), and check the time after each paragraph or every few questions to make sure you are still “on schedule.”

If you find that you are falling behind time during the test, you must speed up. Even though a rushed answer is more likely to be incorrect, it is better to miss a couple of questions by being rushed, than to completely miss later questions by not having enough time. It is better to end with more time than you need than to run out of time.

If you are forced to speed up, do it efficiently. Usually one or more answer choices can be eliminated without too much difficulty. Above all, don't panic. Don't speed up and just begin guessing at random choices. By pacing yourself, and continually monitoring your progress against the clock or your watch, you will always know exactly how far ahead or behind you are with your available time. If you find that you are a few minutes behind on a section, don't skip questions without spending any time on it, just to catch back up. Spend perhaps a little less than a minute per question and after a few questions, you will have caught back up more gradually. Once you catch back up, you can continue working each problem at your normal pace. If you have time at the end, go back then and finish the questions that you left behind.

Furthermore, don't dwell on the problems that you were rushed on. If a problem was taking up too much time and you made a hurried guess, it must have been difficult. The difficult questions are the ones you are most likely to miss anyway, so it isn't a big loss. If you have time left over, as you review the skipped questions, start at the earliest skipped question, spend at most another minute, and then move on to the next skipped question.

Always mark skipped questions in your workbook, NOT on the Scantron. Last minute guessing will be covered in the next chapter.

Lastly, sometimes it is beneficial to slow down if you are constantly getting ahead of time. You are always more likely to catch a careless mistake by working more slowly than quickly, and among very high-scoring test takers (those who are likely to have lots of time left over), careless errors affect the score more than mastery of material.

Estimation

For some math questions, estimate. Calculation takes time, and you should avoid it whenever possible. You can usually eliminate three obviously wrong choices quite easily. For example, suppose you are told that an object has traveled 48 meters in 11 seconds, and you are asked to find its speed. You are given these choices:

- A. 250 m/s
- B. 42 m/s
- C. 4.4 m/s
- D. 1.2 m/s

You know that 48 divided by 11 will be a little over 4, so you can pick out C as the answer without ever doing the calculation.

Scanning

For the Paragraph Comprehension Test, don't waste time reading, enjoying, and completely understanding the paragraph. Simply scan the paragraph to get a rough idea of what it is about. You will return to the paragraph for each question, so there is no need to memorize it. Only spend as much time scanning as is necessary to get a vague impression of its overall subject content.

Secret Key #2 – Guessing is Not Guesswork

You probably know that guessing is a good idea on the ASVAB- unlike other standardized tests, there is no penalty for getting a wrong answer. Even if you have no idea about a question, you still have a 20-25% chance of getting it right.

Most test takers do not understand the impact that proper guessing can have on their score. Unless you score extremely high, guessing will significantly contribute to your final score.

Monkeys Take the ASVAB

If you have only four answer choices, then you have approximately a 25% chance of getting it correct. What most test takers don't realize is that to ensure a 25% chance, you have to guess randomly. If you put 20 monkeys in a room to take the ASVAB, assuming they answered once per question and behaved themselves, on average they would get 25% of the questions correct. Put 20 typical test takers in the room, and the average will be much lower among guessed questions. Why?

1. ASVAB intentionally writes deceptive answer choices that "look" right. A student has no idea about a question, so picks the "best looking" answer, which is often wrong. The monkey has no idea what looks good and what doesn't, so will consistently be lucky about 25% of the time.
2. Test takers will eliminate answer choices from the guessing pool based on a hunch or intuition. Simple but correct answers often get excluded, leaving a 0% chance of being correct. The monkey has no clue, and often gets lucky with the best choice.

This is why the process of elimination endorsed by most test courses is flawed and detrimental to your performance- test takers don't guess, they make an ignorant stab in the dark that is usually worse than random.

Success Strategy #2

Let me introduce one of the most valuable ideas of this course- the \$5 challenge:

You only mark your “best guess” if you are willing to bet \$5 on it.

You only eliminate choices from guessing if you are willing to bet \$5 on it.

Why \$5? Five dollars is an amount of money that is small yet not insignificant, and can really add up fast (20 questions could cost you \$100). Likewise, each answer choice on one question of the ASVAB will have a small impact on your overall score, but it can really add up to a lot of points in the end.

The process of elimination IS valuable. The following shows your chance of guessing it right:

If you eliminate this many choices:	0	1	2	3
Chance of getting it correct:	25%	33%	50%	100%

If you accidentally eliminate the right answer or go on a hunch for an incorrect answer, your chances drop dramatically: to 0%, not to mention the wrong answer penalty. By guessing among all the answer choices, you are GUARANTEED to have a shot at the right answer.

That’s why the \$5 test is so valuable- if you give up the advantage and safety of a pure guess, it had better be worth the risk.

What we still haven’t covered is how to be sure that whatever guess you make is truly random. Here’s the easiest way:

Always pick the first answer choice among those remaining.

Such a technique means that you have decided, **before you see a single test question**, exactly how you are going to guess- and since the order of choices

tells you nothing about which one is correct, this guessing technique is perfectly random.

Let's try an example-

A student encounters the following problem on the Mathematics Knowledge Test:

What is the cosine of an angle in a right triangle that is 3 meters on the adjacent side, 5 meters on the hypotenuse, and 4 meters on the opposite side?

- A. 1
- B. 0.6
- C. 0.75
- D. 1.25

The student has a small idea about this question- he is pretty sure that cosine is opposite over hypotenuse, but he wouldn't bet \$5 on it. He knows that cosine is "something" over hypotenuse, and since the hypotenuse is the largest number, he is willing to bet \$5 on both choices A and D not being correct. So he is down to B, and C. At this point, he guesses B, since B is the first choice remaining.

The student is correct by choosing B, since cosine is adjacent over hypotenuse. He only eliminated those choices he was willing to bet money on, AND he did not let his stale memories (often things not known definitely will get mixed up in the exact opposite arrangement in one's head) about the formula for cosine influence his guess. He blindly chose the first remaining choice, and was rewarded with the fruits of a random guess.

This section is not meant to scare you away from making educated guesses or eliminating choices- you just need to define when a choice is worth eliminating.

The \$5 test, along with a pre-defined random guessing strategy, is the best way to make sure you reap all of the benefits of guessing.

Specific Guessing Techniques

Slang

Scientific sounding answers are better than slang ones. In the answer choices below, choice B is much less scientific and is incorrect, while choice A is a scientific analytical choice and is correct.

Example:

- A. To compare the outcomes of the two different kinds of treatment.
- B. Because some subjects insisted on getting one or the other of the treatments.

Extreme Statements

Avoid wild answers that throw out highly controversial ideas that are proclaimed as established fact. Choice A is a radical idea and is incorrect. Choice B is a calm rational statement. Notice that Choice B does not make a definitive, uncompromising stance, using a hedge word “if” to provide wiggle room.

Example:

- A. Bypass surgery should be discontinued completely.
- B. Medication should be used instead of surgery if patients suffer from mild chest pain.

Similar Answer Choices

When you have two answer choices that are direct opposites, one of them is usually the correct answer.

Example:

- A. The solution is saturated
- B. The solution is not saturated

These two answer choices are very similar and fall into the same family of answer choices. A family of answer choices is when two or three answer choices are very similar. Often two will be opposites and one may show an equality.

Example:

- A. Drives at 50 or 60 miles per hour
- B. Drives at 50 miles per hour
- C. Drives at 60 miles per hour
- D. Always reaches his destination

Note how the first three choices are all related. They all ask about a driving speed. Beware of immediately recognizing choices B and C as near opposites and choosing one of those two. Choice A is in the same family of questions and should be considered as well. However, choice D is not in the same family of questions. It has nothing to do with driving speed and can be discounted in most cases.

Hedging

When asked for a conclusion that may be drawn, look for critical “hedge” phrases, such as likely, may, can, will often, sometimes, etc, often, almost, mostly, usually, generally, rarely, sometimes. Question writers insert these hedge phrases to cover every possibility. Often an answer will be wrong simply because it leaves no room for exception. Avoid answer choices that have definitive words like “exactly,” and “always”.

Summary of Guessing Techniques

1. Eliminate as many choices as you can by using the \$5 test. Use the common guessing strategies to help in the elimination process, but only eliminate choices that pass the \$5 test.
2. Among the remaining choices, only pick your “best guess” if it passes the \$5 test.

3. Otherwise, guess randomly by picking the first remaining choice that was not eliminated.

Secret Key #3 – Practice Smarter, Not Harder

Many test takers delay the test preparation process because they dread the awful amounts of practice time they think necessary to succeed on the test. We have refined an effective method that will take you only a fraction of the time.

There are a number of “obstacles” in your way on the ASVAB. Among these are answering questions, finishing in time, and mastering test-taking strategies. All must be executed on the day of the test at peak performance, or your score will suffer. The ASVAB is a mental marathon that has a large impact on your future.

Just like a marathon runner, it is important to work your way up to the full challenge. So first you just worry about questions, and then time, and finally strategy:

Success Strategy #3

1. Find a good source for ASVAB practice tests.
2. If you are willing to make a larger time investment, consider using more than one study guide- often the different approaches of multiple authors will help you "get" difficult concepts.
3. Take a practice test with no time constraints, with all study helps “open book.” Take your time with questions and focus on applying strategies.
4. Take another test, this time with time constraints, with all guides “open book.”
5. Take a final practice test with no open material and time limits.

If you have time to take more practice tests, just repeat step 5. By gradually exposing yourself to the full rigors of the test environment, you will condition your mind to the stress of test day and maximize your success.

Secret Key #4 – Prepare Smart, Don't Procrastinate

Let me state an obvious fact: if you take the ASVAB three times, you will get three different scores. This is due to the way you feel on test day, the level of preparedness you have, and, despite ASVAB's claims to the contrary, some tests WILL be easier for you than others.

Since your acceptance to the Armed Forces (if you are taking it in order to join the Armed Forces) and qualification for specialized positions within the Armed Forces will largely depend on your score, you should maximize your chances of success.

Don't take the ASVAB as a "practice" test. Feel free to take practice tests on your own, but when you go to take the ASVAB you should be ready to give it 100%. Make sure that you spend adequate time beforehand, to ensure that you are prepared, focused, and able to do your best!

Part of preparing smart is knowing what you need to study for. The ASVAB has 8 different individual sub-tests (until recently there were 10). However, you only need to succeed on 4 of them in order to qualify for the Armed Forces. The tests that you need to study for are Arithmetic Reasoning, Word Knowledge, Paragraph Comprehension and Mathematics Knowledge.

These are the scores that count towards your Armed Forces Qualifying Test (AFQT) score. This AFQT score determines whether you're qualified to enlist in the U.S. military. Your scores in the other areas of the ASVAB determine how qualified you are for certain military specialties. Score high, and your chances of getting the specialty/job you want will increase.

Secret Key #5 – Test Yourself

Everyone knows that time is money. There is no need to spend too much of your time or too little of your time preparing for the test. You should only spend as much of your precious time preparing as is necessary for you to get the score you need.

Once you have taken a practice test under real conditions of time constraints, then you will know if you are ready for the test or not.

If you have scored extremely high the first time that you take the practice test, then there is not much point in spending countless hours studying. You are already there.

Benchmark your abilities by retaking practice tests and seeing how much you have improved. Once you score high enough to guarantee success, then you are ready.

If you have scored well below where you need, then knuckle down and begin studying in earnest. Check your improvement regularly through the use of practice tests under real conditions. Above all, don't worry, panic, or give up. The key is perseverance!

Then, when you go to take the test, remain confident and remember how well you did on the practice tests. If you can score high enough on a practice test, then you can do the same on the real thing.

Top 20 Test Taking Tips

1. Carefully follow all the test registration procedures
2. Know the test directions, duration, topics, question types, how many questions
3. Setup a flexible study schedule at least 3-4 weeks before test day
4. Study during the time of day you are most alert, relaxed, and stress free
5. Maximize your learning style; visual learner use visual study aids, auditory learner use auditory study aids
6. Focus on your weakest knowledge base
7. Find a study partner to review with and help clarify questions
8. Practice, practice, practice
9. Get a good night's sleep; don't try to cram the night before the test
10. Eat a well balanced meal
11. Know the exact physical location of the testing site; drive the route to the site prior to test day
12. Bring a set of ear plugs; the testing center could be noisy
13. Wear comfortable, loose fitting, layered clothing to the testing center; prepare for it to be either cold or hot during the test
14. Bring at least 2 current forms of ID to the testing center
15. Arrive to the test early; be prepared to wait and be patient
16. Eliminate the obviously wrong answer choices, then guess the first remaining choice
17. Pace yourself; don't rush, but keep working and move on if you get stuck
18. Maintain a positive attitude even if the test is going poorly
19. Keep your first answer unless you are positive it is wrong
20. Check your work, don't make a careless mistake

General Strategies

The most important thing you can do is to ignore your fears and jump into the test immediately- do not be overwhelmed by any strange-sounding terms. You have to jump into the test like jumping into a pool- all at once is the easiest way.

Make Predictions

As you read and understand the question, try to guess what the answer will be. Remember that several of the answer choices are wrong, and once you begin reading them, your mind will immediately become cluttered with answer choices designed to throw you off. Your mind is typically the most focused immediately after you have read the question and digested its contents. If you can, try to predict what the correct answer will be. You may be surprised at what you can predict.

Quickly scan the choices and see if your prediction is in the listed answer choices. If it is, then you can be quite confident that you have the right answer. It still won't hurt to check the other answer choices, but most of the time, you've got it!

Answer the Question

It may seem obvious to only pick answer choices that answer the question, but the test writers can create some excellent answer choices that are wrong. Don't pick an answer just because it sounds right, or you believe it to be true. It **MUST** answer the question. Once you've made your selection, always go back and check it against the question and make sure that you didn't misread the question, and the answer choice does answer the question posed.

Benchmark

After you read the first answer choice, decide if you think it sounds correct or not. If it doesn't, move on to the next answer choice. If it does, mentally mark that

answer choice. This doesn't mean that you've definitely selected it as your answer choice, it just means that it's the best you've seen thus far. Go ahead and read the next choice. If the next choice is worse than the one you've already selected, keep going to the next answer choice. If the next choice is better than the choice you've already selected, mentally mark the new answer choice as your best guess.

The first answer choice that you select becomes your standard. Every other answer choice must be benchmarked against that standard. That choice is correct until proven otherwise by another answer choice beating it out. Once you've decided that no other answer choice seems as good, do one final check to ensure that your answer choice answers the question posed.

Valid Information

Don't discount any of the information provided in the question. Every piece of information may be necessary to determine the correct answer. None of the information in the question is there to throw you off (while the answer choices will certainly have information to throw you off). If two seemingly unrelated topics are discussed, don't ignore either. You can be confident there is a relationship, or it wouldn't be included in the question, and you are probably going to have to determine what is that relationship to find the answer.

Avoid "Fact Traps"

Don't get distracted by a choice that is factually true. Your search is for the answer that answers the question. Stay focused and don't fall for an answer that is true but incorrect. Always go back to the question and make sure you're choosing an answer that actually answers the question and is not just a true statement. An answer can be factually correct, but it **MUST** answer the question asked. Additionally, two answers can both be seemingly correct, so be sure to read all of the answer choices, and make sure that you get the one that **BEST** answers the question.

Milk the Question

Some of the questions may throw you completely off. They might deal with a subject you have not been exposed to, or one that you haven't reviewed in years. While your lack of knowledge about the subject will be a hindrance, the question itself can give you many clues that will help you find the correct answer. Read the question carefully and look for clues. Watch particularly for adjectives and nouns describing difficult terms or words that you don't recognize. Regardless of if you completely understand a word or not, replacing it with a synonym either provided or one you more familiar with may help you to understand what the questions are asking. Rather than wracking your mind about specific detailed information concerning a difficult term or word, try to use mental substitutes that are easier to understand.

The Trap of Familiarity

Don't just choose a word because you recognize it. On difficult questions, you may not recognize a number of words in the answer choices. The test writers don't put "make-believe" words on the test; so don't think that just because you only recognize all the words in one answer choice means that answer choice must be correct. If you only recognize words in one answer choice, then focus on that one. Is it correct? Try your best to determine if it is correct. If it is, that is great, but if it doesn't, eliminate it. Each word and answer choice you eliminate increases your chances of getting the question correct, even if you then have to guess among the unfamiliar choices.

Eliminate Answers

Eliminate choices as soon as you realize they are wrong. But be careful! Make sure you consider all of the possible answer choices. Just because one appears right, doesn't mean that the next one won't be even better! The test writers will usually put more than one good answer choice for every question, so read all of them. Don't worry if you are stuck between two that seem right. By getting down

to just two remaining possible choices, your odds are now 50/50. Rather than wasting too much time, play the odds. You are guessing, but guessing wisely, because you've been able to knock out some of the answer choices that you know are wrong. If you are eliminating choices and realize that the last answer choice you are left with is also obviously wrong, don't panic. Start over and consider each choice again. There may easily be something that you missed the first time and will realize on the second pass.

Tough Questions

If you are stumped on a problem or it appears too hard or too difficult, don't waste time. Move on! Remember though, if you can quickly check for obviously incorrect answer choices, your chances of guessing correctly are greatly improved. Before you completely give up, at least try to knock out a couple of possible answers. Eliminate what you can and then guess at the remaining answer choices before moving on.

Brainstorm

If you get stuck on a difficult question, spend a few seconds quickly brainstorming. Run through the complete list of possible answer choices. Look at each choice and ask yourself, "Could this answer the question satisfactorily?" Go through each answer choice and consider it independently of the other. By systematically going through all possibilities, you may find something that you would otherwise overlook. Remember that when you get stuck, it's important to try to keep moving.

Read Carefully

Understand the problem. Read the question and answer choices carefully. Don't miss the question because you misread the terms. You have plenty of time to read each question thoroughly and make sure you understand what is being asked. Yet a happy medium must be attained, so don't waste too much time. You must read carefully, but efficiently.

Face Value

When in doubt, use common sense. Always accept the situation in the problem at face value. Don't read too much into it. These problems will not require you to make huge leaps of logic. The test writers aren't trying to throw you off with a cheap trick. If you have to go beyond creativity and make a leap of logic in order to have an answer choice answer the question, then you should look at the other answer choices. Don't overcomplicate the problem by creating theoretical relationships or explanations that will warp time or space. These are normal problems rooted in reality. It's just that the applicable relationship or explanation may not be readily apparent and you have to figure things out. Use your common sense to interpret anything that isn't clear.

Prefixes

If you're having trouble with a word in the question or answer choices, try dissecting it. Take advantage of every clue that the word might include. Prefixes and suffixes can be a huge help. Usually they allow you to determine a basic meaning. Pre- means before, post- means after, pro - is positive, de- is negative. From these prefixes and suffixes, you can get an idea of the general meaning of the word and try to put it into context. Beware though of any traps. Just because con is the opposite of pro, doesn't necessarily mean congress is the opposite of progress!

Hedge Phrases

Watch out for critical "hedge" phrases, such as likely, may, can, will often, sometimes, often, almost, mostly, usually, generally, rarely, sometimes. Question writers insert these hedge phrases to cover every possibility. Often an answer choice will be wrong simply because it leaves no room for exception. Avoid answer choices that have definitive words like "exactly," and "always".

Switchback Words

Stay alert for “switchbacks”. These are the words and phrases frequently used to alert you to shifts in thought. The most common switchback word is “but”.

Others include although, however, nevertheless, on the other hand, even though, while, in spite of, despite, regardless of.

New Information

Correct answer choices will rarely have completely new information included. Answer choices typically are straightforward reflections of the material asked about and will directly relate to the question. If a new piece of information is included in an answer choice that doesn't even seem to relate to the topic being asked about, then that answer choice is likely incorrect. All of the information needed to answer the question is usually provided for you, and so you should not have to make guesses that are unsupported or choose answer choices that require unknown information that cannot be reasoned on its own.

Time Management

On technical questions, don't get lost on the technical terms. Don't spend too much time on any one question. If you don't know what a term means, then since you don't have a dictionary, odds are you aren't going to get much further. You should immediately recognize terms as whether or not you know them. If you don't, work with the other clues that you have, the other answer choices and terms provided, but don't waste too much time trying to figure out a difficult term.

Contextual Clues

Look for contextual clues. An answer can be right but not correct. The contextual clues will help you find the answer that is most right and is correct. Understand the context in which a phrase or statement is made. This will help you make important distinctions.

Don't Panic

Panicking will not answer any questions for you. Therefore, it isn't helpful. When you first see the question, if your mind goes blank, take a deep breath. Force yourself to mechanically go through the steps of solving the problem and using the strategies you've learned.

Pace Yourself

Don't get clock fever. It's easy to be overwhelmed when you're looking at a page full of questions, your mind is full of random thoughts and feeling confused, and the clock is ticking down faster than you would like. Calm down and maintain the pace that you have set for yourself. As long as you are on track by monitoring your pace, you are guaranteed to have enough time for yourself. When you get to the last few minutes of the test, it may seem like you won't have enough time left, but if you only have as many questions as you should have left at that point, then you're right on track!

Answer Selection

The best way to pick an answer choice is to eliminate all of those that are wrong, until only one is left and confirm that is the correct answer. Sometimes though, an answer choice may immediately look right. Be careful! Take a second to make sure that the other choices are not equally obvious. Don't make a hasty mistake. There are only two times that you should stop before checking other answers. First is when you are positive that the answer choice you have selected is correct. Second is when time is almost out and you have to make a quick guess!

Check Your Work

Since you will probably not know every term listed and the answer to every question, it is important that you get credit for the ones that you do know. Don't miss any questions through careless mistakes. If at all possible, try to take a second to look back over your answer selection and make sure you've selected

the correct answer choice and haven't made a costly careless mistake (such as marking an answer choice that you didn't mean to mark). This quick double check should more than pay for itself in caught mistakes for the time it costs.

Beware of Directly Quoted Answers

Sometimes an answer choice will repeat word for word a portion of the question or reference section. However, beware of such exact duplication – it may be a trap! More than likely, the correct choice will paraphrase or summarize a point, rather than being exactly the same wording.

Slang

Scientific sounding answers are better than slang ones. An answer choice that begins “To compare the outcomes...” is much more likely to be correct than one that begins “Because some people insisted...”

Extreme Statements

Avoid wild answers that throw out highly controversial ideas that are proclaimed as established fact. An answer choice that states the “process should be used in certain situations, if...” is much more likely to be correct than one that states the “process should be discontinued completely.” The first is a calm rational statement and doesn't even make a definitive, uncompromising stance, using a hedge word “if” to provide wiggle room, whereas the second choice is a radical idea and far more extreme.

Answer Choice Families

When you have two or more answer choices that are direct opposites or parallels, one of them is usually the correct answer. For instance, if one answer choice states “x increases” and another answer choice states “x decreases” or “y increases,” then those two or three answer choices are very similar in construction and fall into the same family of answer choices. A family of answer choices is when two or three answer choices are very similar in construction, and

yet often have a directly opposite meaning. Usually the correct answer choice will be in that family of answer choices. The “odd man out” or answer choice that doesn’t seem to fit the parallel construction of the other answer choices is more likely to be incorrect.

Word Knowledge Test

The Word Knowledge Test on the ASVAB consists of an 11 minute section with 35 questions.

You will be given a sentence that has an underlined, boldfaced word. From the four answer choices provided, you must choose which answer choice most nearly means the same as the underlined word. In other words, you have to identify a synonym of the underlined word.

Nearly and Perfect Synonyms

You must determine which of five provided choices has the best similar definition as a certain word. Nearly similar may often be more correct, because the goal is to test your understanding of the nuances, or little differences, between words. A perfect match may not exist, so don't be concerned if your answer choice is not a complete synonym. Focus upon edging closer to the word. Eliminate the words that you know aren't correct first. Then narrow your search. Cross out the words that are the least similar to the main word until you are left with the one that is the most similar.

Prefixes

Take advantage of every clue that the word might include. Prefixes and suffixes can be a huge help. Usually they allow you to determine a basic meaning. Pre- means before, post- means after, pro – is positive, de- is negative. From these prefixes and suffixes, you can get an idea of the general meaning of the word and look for its opposite. Beware though of any traps. Just because con is the opposite of pro, doesn't necessarily mean congress is the opposite of progress! A list of the most common prefixes and suffixes is included in the appendix.

Positive vs. Negative

Many words can be easily determined to be a positive word or a negative word. Words such as despicable, gruesome, and bleak are all negative. Words such as ecstatic, praiseworthy, and magnificent are all positive. You will be surprised at how many words can be considered as either positive or negative. Once that is determined, you can quickly eliminate any other words with an opposite meaning and focus on those that have the other characteristic, whether positive or negative.

Word Strength

Part of the challenge is determining the most nearly similar word. This is particularly true when two words seem to be similar. When analyzing a word, determine how strong it is. For example, stupendous and good are both positive words. However, stupendous is a much stronger positive adjective than good. Also, towering or gigantic are stronger words than tall or large. Search for an answer choice that is similar and also has the same strength. If the main word is weak, look for similar words that are also weak. If the main word is strong, look for similar words that are also strong.

Type and Topic

Another key is what type of word is the main word. If the main word is an adjective describing height, then look for the answer to be an adjective describing height as well. Match both the type and topic of the main word. The type refers to the parts of speech, whether the word is an adjective, adverb, or verb. The topic refers to what the definition of the word includes, such as sizes or fashion styles.

Form a Sentence

Many words seem more natural in a sentence. *Specious* reasoning, *irresistible* force, and *uncanny* resemblance are just a few of the word combinations that usually go together. When faced with an uncommon word that you barely understand (and on the ASVAB there will be many), try to put the word in a sentence that makes sense. It will help you to understand the word's meaning

and make it easier to determine its opposite. Once you have a good descriptive sentence that utilizes the main word properly, plug in the answer choices and see if the sentence still has the same meaning with each answer choice. The answer choice that maintains the meaning of the sentence is correct!

Use Replacements

Using a sentence is a great help because it puts the word into a proper perspective. Since ASVAB actually gives you a sentence, sometimes you don't always have to create your own (though in many cases the sentence won't be helpful). Read the provided sentence with the underlined word. Then read the sentence again and again, each time replacing the underlined word with one of the answer choices. The correct answer should "sound" right and fit.

Example: The desert landscape was desolate.

- A. cheerful
- B. creepy
- C. excited
- D. forlorn

After reading the example sentence, begin replacing "desolate" with each of the answer choices. Does "the desert landscape was cheerful, creepy, excited, or forlorn" sound right? Deserts are typically hot, empty, and rugged environments, probably not cheerful, or excited. While creepy might sound right, that word would certainly be more appropriate for a haunted house. But "the desert landscape was forlorn" has a certain ring to it and would be correct.

Eliminate Similar Choices

If you don't know the word, don't worry. Look at the answer choices and just use them. Remember that three of the answer choices will always be wrong. If you can find a common relationship between any three answer choices, then you know they are wrong. Find the answer choice that does not have a common relationship to the other answer choices and it will be the correct answer.

Example: Laconic most nearly means

- A. wordy
- B. talkative
- C. expressive
- D. quiet

In this example the first three choices are all similar. Even if you don't know that laconic means the same as quiet, you know that "quiet" must be correct, because the other three choices were all virtually the same. They were all the same, so they must all be wrong. The one that is different must be correct. So, don't worry if you don't know a word. Focus on the answer choices that you do understand and see if you can identify similarities. Even identifying two words that are similar will allow you to eliminate those two answer choices, for they are both wrong, because they are either both right or both wrong (they're similar, remember), so since they can't both be right, they both must be wrong.

The Trap of Familiarity

Don't choose a word just because you recognize it. On difficult questions, you may only recognize one or two words. ASVAB doesn't put "make-believe" words on the test, so don't think that just because you only recognize one word means that word must be correct. If you don't recognize four words, then focus on the one that you do recognize. Is it correct? Try your best to determine if it fits the sentence. If it does, that is great, but if it doesn't, eliminate it. Each word you eliminate increases your chances of getting the question correct.

Read Carefully

Be sure to read all of the choices. You may find an answer choice that seems right at first, but continue reading and you may find a better choice.

Difficult words are usually synonyms or antonyms (opposites). Whenever you have extremely difficult words that you don't understand, look at the answer choices. Try and identify whether two or more of the answer choices are either

synonyms or antonyms. Remember that if you can find two words that have the same relationship (for example, two answer choices are synonyms) then you can eliminate them both.

Work Fast

Since you have 35 questions to answer in only 11 minutes, that means that you have .31 minutes to spend per question. This section faces a greater time crunch than any other test you will take on the ASVAB. If you are stuck on one word, don't waste too much time. Eliminate the answers you could bet a quick \$5 on and then pick the first one that remains. You can make a note in your book and if you have time you can always come back, but don't waste your time. You have to work fast!

Paragraph Comprehension Test

The Paragraph Comprehension Test on the ASVAB consists of a 13 minute section with 15 questions.

You will be given one or more paragraphs of information to read followed by a question or incomplete statement. From the four answer choices provided, you must choose which answer choice best completes the statement or answers the question.

Skimming

Your first task when you begin reading is to answer the question “What is the topic of the selection?” This can best be answered by quickly skimming the paragraph for the general idea, stopping to read only the first sentence of each paragraph. A paragraph’s first sentence is usually the main topic sentence, and it gives you a summary of the content of the paragraph.

Once you’ve skimmed the paragraphs, stopping to read only the first sentences, you will have a general idea about what it is about, as well as what is the expected topic in each paragraph.

Each question will contain clues as to where to find the answer in the paragraph. Do not just randomly search through the paragraph for the correct answer to each question. Search scientifically. Find key word(s) or ideas in the question that are going to either contain or be near the correct answer. These are typically nouns, verbs, numbers, or phrases in the question that will probably be duplicated in the paragraph. Once you have identified those key word(s) or idea, skim the paragraph quickly to find where those key word(s) or idea appears. The correct answer choice will be nearby.

Example: What caused Martin to suddenly return to Paris?

The key word is Paris. Skim the paragraph quickly to find where this word appears. The answer will be close by that word.

However, sometimes key words in the question are not repeated in the paragraph. In those cases, search for the general idea of the question.

Example: Which of the following was the psychological impact of the author's childhood upon the remainder of his life?

Key words are "childhood" or "psychology". While searching for those words, be alert for other words or phrases that have similar meaning, such as "emotional effect" or "mentally" which could be used in the paragraph, rather than the exact word "psychology".

Numbers or years can be particularly good key words to skim for, as they stand out from the rest of the text.

Example: Which of the following best describes the influence of Monet's work in the 20th century?

20th contains numbers and will easily stand out from the rest of the text. Use 20th as the key word to skim for in the paragraph.

Other good key word(s) may be in quotation marks. These identify a word or phrase that is copied directly from the paragraph. In those cases, the word(s) in quotation marks are exactly duplicated in the paragraph.

Example: In her college years, what was meant by Margaret's "drive for excellence"?

“Drive for excellence” is a direct quote from the paragraph and should be easy to find.

Beware of Directly Quoted Answers

Once you’ve quickly found the correct section of the paragraph to find the answer, focus upon the answer choices. Sometimes a choice will repeat word for word a portion of the paragraph near the answer. However, beware of such duplication – it may be a trap! More than likely, the correct choice will paraphrase or summarize the related portion of the paragraph, rather than being exactly the same wording.

Truth Does Not Equal Correctness

For the answers that you think are correct, read them carefully and make sure that they answer the question. An answer can be factually correct, but it **MUST** answer the question asked. Additionally, two answers can both be seemingly correct, so be sure to read all of the answer choices, and make sure that you get the one that **BEST** answers the question.

When There’s No Key Word

Some questions will not have a key word.

Example: Which of the following would the author of this paragraph likely agree with?

In these cases, look for key words in the answer choices. Then skim the paragraph to find where the answer choice occurs. By skimming to find where to look, you can minimize the time required.

Sometimes it may be difficult to identify a good key word in the question to skim for in the paragraph. In those cases, look for a key word in one of the answer choices to skim for. Often the answer choices can all be found in the same paragraph, which can quickly narrow your search.

Paragraph Focus

Focus upon the first sentence of each paragraph, which is the most important. The main topic of the paragraph is usually there.

Once you've read the first sentence in the paragraph, you have a general idea about what each paragraph will be about. As you read the questions, try to determine which paragraph will have the answer. Paragraphs have a concise topic. The answer should either obviously be there or obviously not. It will save time if you can jump straight to the paragraph, so try to remember what you learned from the first sentences.

Example: The first paragraph is about poets; the second is about poetry. If a question asks about poetry, where will the answer be? The second paragraph.

The main idea of a paragraph is typically spread across all or most of its paragraphs. Whereas the main idea of a paragraph may be completely different than the main idea of the very next paragraph, a main idea for a paragraph affects all of the paragraphs in one form or another.

Similar Choices

Similar choices may be crossed off simultaneously if they are close enough.

Watch for answers that are similarly worded. Since only one answer can be correct, if there are two answers that appear to mean the same thing, they must BOTH be incorrect, and can be eliminated.

Example Answer Choices:

- A. changing values and attitudes
- B. a large population of mobile or uprooted people

These answer choices are similar; they both describe a fluid culture. Because of their similarity, they can be linked together. Since the answer can have only one choice, they can also be eliminated together.

Contextual Clues

Look for contextual clues. An answer can be right but not correct. The contextual clues will help you find the answer that is most right and is correct. Understand the context in which a phrase is stated.

When asked for the implied meaning of a statement made in the paragraph, immediately go find the statement and read the context. Also, look for an answer choice that has a similar phrase to the statement in question.

Example: In the paragraph, what is implied by the phrase “Churches have become more or less part of the furniture”?

Find an answer choice that is similar or describes the phrase “part of the furniture” as that is the key phrase in the question. “Part of the furniture” is a saying that means something is fixed, immovable, or set in their ways. Those are all similar ways of saying “part of the furniture.” As such, the correct answer choice will probably include a similar rewording of the expression.

Example: Why was John described as “morally desperate”.

The answer will probably have some sort of definition of morals in it. “Morals” refers to a code of right and wrong behavior, so the correct answer choice will likely have words that mean something like that.

Fact/Opinion

Remember that answer choices that are facts will typically have no ambiguous words. For example, how long is a long time? What defines an ordinary person?

These ambiguous words of “long” and “ordinary” should not be in a factual statement. However, if all of the choices have ambiguous words, go to the context of the paragraph. Often a factual statement may be set out as a research finding.

Example: “The scientist found that the eye reacts quickly to change in light.”

Opinions may be set out in the context of words like thought, believed, understood, or wished.

Example: “He thought the Yankees should win the World Series.”

Time Management

In technical paragraphs, don’t get lost on the technical terms. Skip them and move on. You want a general understanding of what is going on, not a mastery of the paragraph.

When you encounter material in the selection that seems difficult to understand, bracket it. It often may not be necessary and can be skipped. Only spend time trying to understand it if it is going to be relevant for a question. Understand difficult phrases only as a last resort.

Answer general questions before detail questions. A reader with a good understanding of the whole paragraph can often answer general questions without rereading a word. Get the easier questions out of the way before tackling the more time consuming ones.

Identify each question by type. Usually the wording of a question will tell you whether you can find the answer by referring directly to the paragraph or by using your reasoning powers. You alone know which question types you customarily

handle with ease and which give you trouble and will require more time. Save the difficult questions for last.

Hedge Phrases Revisited

Once again, watch out for critical “hedge” phrases, such as likely, may, can, will often, sometimes, etc, often, almost, mostly, usually, generally, rarely, sometimes. Question writers insert these hedge phrases, to cover every possibility. Often an answer will be wrong simply because it leaves no room for exception.

Example: Animals live longer in cold places than animals in warm places.

This answer choice is wrong, because there are exceptions in which certain warm climate animals live longer. This answer choice leaves no possibility of exception. It states that every animal species in cold places live longer than animal species in warm places. Correct answer choices will typically have a key hedge word to leave room for exceptions.

Example: In severe cold, a polar bear cub is likely to survive longer than an adult polar bear.

This answer choice is correct, because not only does the paragraph imply that younger animals survive better in the cold, it also allows for exceptions to exist. The use of the word “likely” leaves room for cases in which a polar bear cub might not survive longer than the adult polar bear.

Word Usage Questions

When asked how a word is used in the paragraph, don’t use your existing knowledge of the word. The question is being asked precisely because there is some strange or unusual usage of the word in the paragraph. Go to the

paragraph and use contextual clues to determine the answer. Don't simply use the popular definition you already know.

Switchback Words

Stay alert for "switchbacks". These are the words and phrases frequently used to alert you to shifts in thought. The most common switchback word is "but".

Others include although, however, nevertheless, on the other hand, even though, while, in spite of, despite, regardless of.

Avoid "Fact Traps"

Once you know which paragraph the answer will be in, focus on that paragraph. However, don't get distracted by a choice that is factually true about the paragraph. Your search is for the answer that answers the question, which may be about a tiny aspect in the paragraph. Stay focused and don't fall for an answer that describes the larger picture of the paragraph. Always go back to the question and make sure you're choosing an answer that actually answers the question and is not just a true statement.

Milk the Paragraph

Some of the paragraphs may throw you completely off. They might deal with a subject you have not been exposed to, or one that you haven't reviewed in years. While your lack of knowledge about the subject will be a hindrance, the paragraph itself can give you many clues that will help you find the correct answer. Read the paragraph carefully, and look for clues. Watch particularly for adjectives and nouns describing difficult terms or words that you don't recognize. Regardless of if you understand a word or not, replacing it with the synonyms used for it in the paragraph may help you to understand what the questions are asking.

Example: A bacteriophage is a virus that infects bacteria....

While you may not know much about the characteristics of a bacteriophage, the fifth word into the paragraph told you that a bacteriophage is a virus. Wherever

you see the word “bacteriophage,” you can mentally replace it with the word “virus”. Your more general knowledge of viruses may enable you to answer the question.

Look carefully for these descriptive synonyms (nouns) and adjectives and use them to help you understand the difficult terms. Rather than wracking your mind about specific detail information concerning a difficult term in the paragraph, use the more general description or synonym provided to make it easier for you.

Make Predictions

One convenience of questions with short paragraphs full of information is that you can easily remember the few facts presented, compared to a much longer passage full of much more information. As you read and understand the paragraph and then the question, try to guess what the answer will be.

Remember that three of the four answer choices are wrong, and once you begin reading them, your mind will immediately become cluttered with answer choices designed to throw you off. Your mind is typically the most focused immediately after you have read the paragraph and question and digested its contents. If you can, try to predict what the correct answer will be. You may be surprised at what you can predict.

Quickly scan the choices and see if your prediction is in the listed answer choices. If it is, then you can be quite confident that you have the right answer. It still won't hurt to check the other answer choices, but most of the time, you've got it!

Answer the Question

It may seem obvious to only pick answer choices that answer the question, but ASVAB can create some excellent answer choices that are wrong. Don't pick an answer just because it sounds right, or you believe it to be true. It **MUST** answer the question. Once you've made your selection, always go back and check it

against the question and make sure that you didn't misread the question, and the answer choice does answer the question posed.

Benchmark

After you read the first answer choice, decide if you think it sounds correct or not. If it doesn't, move on to the next answer choice. If it does, tentatively mark in your answer book beside that choice. This doesn't mean that you've definitely selected it as your answer choice; it just means that it's the best you've seen thus far. Go ahead and read the next choice. If the next choice is worse than the one you've already selected, keep going to the next answer choice. If the next choice is better than the choice you've already selected, mark the new answer choice as your best guess.

The first answer choice that you select becomes your standard. Every other answer choice must be benchmarked against that standard. That choice is correct until proven otherwise by another answer choice beating it out. Once you've decided that no other answer choice seems as good, do one final check to ensure that it answers the question posed.

New Information

Correct answers will usually contain the information listed in the paragraph and question. Rarely will completely new information be inserted into a correct answer choice. Occasionally the new information may be related in a manner than ASVAB is asking for you to interpret, but seldom.

Example:

The argument above is dependent upon which of the following assumptions?

A. Charles's Law was used to interpret the relationship.

If Charles's Law is not mentioned at all in the referenced paragraph and argument, then it is unlikely that this choice is correct. All of the information needed to answer the question is provided for you, and so you should not have

to make guesses that are unsupported or choose answer choices that have unknown information that cannot be reasoned.

Valid Information

Don't discount any of the information provided in short paragraphs. They are short to begin with and every piece of information may be necessary to determine the correct answer. None of the information in the paragraph is there to throw you off (while the answer choices will certainly have information to throw you off). If two seemingly unrelated topics are discussed, don't ignore either. You can be confident there is a relationship, or it wouldn't be included in the paragraph, and you are probably going to have to determine what is that relationship for the answer.

Don't Fall for the Obvious

When in doubt of the answer, it is easy to go with what you are familiar with. If you are familiar with one of the answer choices and know it is correct, then you may be inclined to guess at that term. Be careful though, and don't go with familiar answers simply because they are familiar.

Example: What happened when the temperature changed to 212° F?

- A. The solution began to boil.
- B. The reaction would become stabilized.
- C. The solution would become saturated.
- D. The reaction would be more easily controlled.

You know that 212° F is the boiling point of pure water. Therefore choice A is familiar, because there is a link between the temperature 212° F and the word "boiling". If you are unsure of the correct answer, you may decide upon choice A simply because of its familiarity. Don't be deceived though. Think through the other answer choices before making your final selection. Just because you have a mental link between the question and an answer choice, doesn't make that answer choice correct.

Random Tips

- For questions that you're not clear on the answer, use the process of elimination. Weed out the answer choices that you know are wrong before choosing an answer.
- Don't fall for "bizarre" choices, mentioning things that are not relevant to the paragraph. Also avoid answers that sound "smart." Again, if you're willing to bet \$5, ignore the tips and go with your bet.

Arithmetic Reasoning and Mathematics Knowledge Test

The Arithmetic Reasoning Test on the ASVAB consists of a 36 minute section with 30 questions.

The Mathematics Knowledge Test on the ASVAB consists of a 24 minute section with 25 questions.

While the Mathematics Knowledge Test will test your general understanding of mathematic principles, the Arithmetic Reasoning Test will test your ability to recognize problem types and apply those principles at a slightly higher level of understanding. But you will still find extremely similar problems on both tests.

A detailed knowledge of algebra and trigonometry is NOT necessary to answer to succeed on ASVAB Arithmetic Reasoning problems. Don't be intimidated by the questions presented on the Arithmetic Reasoning Test. They do not require highly advanced math knowledge, but only the ability to recognize basic problems types and apply simple formulas and methods to solving them.

That is our goal, to show you the simple formulas and methods to solving these problems, so that while you will not gain a mastery of math from this guide, you will learn the methods necessary to succeed on the ASVAB. This guide attacks problems that are simple in nature but may have been glossed over during your education.

Draw the Shape

Some problems may describe a geometric shape, such as a triangle or circle, but may not include a drawing of the shape. ASVAB is testing whether you can read a description and make appropriate inferences by visualizing the object and related information. There is a simple way to overcome this obstacle. DRAW

THE SHAPE! A good drawing (or even a bad drawing) is much easier to understand and interpret than a brief description.

Make a quick drawing or sketch of the shape described. Include any angles or lengths provided in the description. Once you can see the shape, you have already partially solved the problem and will be able to determine the right answer.

Example: A question asks about the area of a square with a side of length 2.

Quickly draw a square and label it with a side of length 2. Any calculations that come from this drawing can be made and “sanity checked” quite easily by referring to the drawing.

Be careful though. Shapes can be drawn many different ways.

Example: A question asks about the area of a rectangle with a side of length 2.

This is very similar, but there is a crucial difference. A square has four sides of the same length. A rectangle can have two sides with completely different lengths. If a rectangle has a long side that is length 2, it will be much smaller than if it has a long side with a length of 100. Suddenly that tiny rectangle becomes a huge rectangle and its area is larger. So remember that when shapes are loosely defined, there is flexibility in how they are drawn. In order to be sure of your answer, see if the shape can be drawn differently, just as you should try different numbers to solve for a variable.

Solving for Variables

Variables are letters that represent an unknown number. You must solve what that number is in single variable problems. The main thing to remember is that you can do anything to one side of an equation as long as you do it to the other.

Many questions will involve variables (where a letter such as “x” is used to represent any number). Try to solve these problems by plugging in a number for the variable and solving for an answer for both A and B. It is best to use different numbers to make sure of your answer. Numbers such as 100, 1, 0, -1, and -100 allow you to check a wide range of possible answers and will keep you from being thrown off by tricky questions. Now you aren’t restricted to only using numbers like 100 or 1. Any number is valid. These numbers are only suggested because they are easy to multiply and divide by.

Example: Solve for x in the equation $2x + 3 = 5$.

Answer: First you want to get the “2x” isolated by itself on one side. To do that, first get rid of the 3. Subtract 3 from both sides of the equation $2x + 3 - 3 = 5 - 3$ or $2x = 2$. Now since the x is being multiplied by the 2 in “2x”, you must divide by 2 to get rid of it. So, divide both sides by 2, which gives $2x / 2 = 2 / 2$ or $x = 1$.

Positive/Negative Numbers

Multiplication/Division

A negative multiplied or divided by a negative = a positive number.

Example: $-3 * -4 = 12$; $-6 / -3 = 2$

A negative multiplied by a positive = a negative number.

Example: $-3 * 4 = -12$; $-6 / 3 = -2$

Addition/Subtraction

Treat a negative sign just like a subtraction sign.

Example: $3 + -2 = 3 - 2$ or 1

Remember that you can reverse the numbers while adding or subtracting.

Example: $-4+2 = 2 + -4 = 2 - 4 = -2$

A negative number subtracted from another number is the same as adding a positive number.

Example: $2 - -1 = 2 + 1 = 3$

Beware of making a simple mistake!

Example: An outdoor thermometer drops from 42° to -8° . By how many degrees has the outside air cooled?

Answer: A common mistake is to say $42^{\circ} - 8^{\circ} = 34^{\circ}$, but that is wrong. It is actually $42^{\circ} - (-8^{\circ})$ or $42^{\circ} + 8^{\circ} = 50^{\circ}$

Exponents

When exponents are multiplied together, the exponents are added to get the final result.

Example: $x \cdot x = x^2$, where x^1 is implied and $1 + 1 = 2$.

When exponents in parentheses have an exponent, the exponents are multiplied to get the final result.

Example: $(x^3)^2 = x^6$, because $3 \cdot 2 = 6$.

Another way to think of this is that $(x^3)^2$ is the same as $(x^3) \cdot (x^3)$. Now you can use the multiplication rule given above and add the exponents, $3 + 3 = 6$, so $(x^3)^2 = x^6$

Decimal Exponents (aka Scientific Notation)

This usually involves converting back and forth between scientific notation and decimal numbers (e.g. 0.02 is the same as 2×10^{-2}). There's an old "cheat" to this problem: if the number is less than 1, the number of digits behind the decimal point is the same as the exponent that 10 is raised to in scientific notation, except that the exponent is a negative number; if the number is greater than 1, the exponent of 10 is equal to the number of digits ahead of the decimal point minus 1.

Example: Convert 3000 to decimal notation.

Answer: 3×10^3 , since 4 digits are ahead of the decimal, the number is greater than 1, and $(4-1) = 3$.

Example: Convert 0.05 to decimal notation.

Answer: 5×10^{-2} , since the five is two places behind the decimal (remember, the exponent is negative for numbers less than 1).

Any number raised to an exponent of zero is always 1. Also, unless you know what you're doing, always convert scientific notation to "regular" decimal numbers before doing arithmetic, and convert the answer back if necessary to answer the problem.

Area, Volume, and Surface Area

You can count on questions about area, volume, and surface area to be a significant part of the ASVAB. It is best to become familiar with the formulas beforehand. A list is provided in the appendix for your convenience.

Percents

A percent can be converted to a decimal simply by dividing it by 100.

Example: What is 2% of 50?

Answer: $2\% = 2/100$ or $.02$, so $.02 * 50 = 1$

Word Problems

Percents

Example: Ticket sales for this year's annual concert at Minutemaid Park were \$125,000. The promoter is predicting that next year's sales, in dollars, will be 40% greater than this year's. How many dollars in ticket sales is the promoter predicting for next year?

Answer: Next year's is 40% greater. $40\% = 40/100 = .4$, so $.4 * \$125,000 = \$50,000$. However, the example stated that next year's would be greater by that amount, so next year's sales would be this year's at \$125,000 plus the increase at \$50,000. $\$125,000 + \$50,000 = \$175,000$

Distances

Example: In a certain triangle, the longest side is 1 foot longer than the second-longest side, and the second-longest side is 1 foot longer than the shortest side. If the perimeter is 30 feet, how many feet long is the shortest side.

Answer: There are three sides, let's call them A, B, and C. A is the longest, B the medium sized, and C the shortest. Because A is described in reference to B's length and B is described in reference to C's length, all calculations should be done off of C, the final reference. Use a variable to represent C's length, "x". This means that C is "x" long, B is "x + 1" because B was 1 foot longer than C, and A is "x + 1 + 1" because A was 1 foot longer than B. To calculate a perimeter you simply add all three sides together, so $P = \text{length A} + \text{length B} + \text{length C}$, or $(x) + (x + 1) + (x + 1 + 1) = x + x + x + 1 + 1 + 1 = 3x + 3$. You know that the perimeter equals 30 feet, so $3x + 3 = 30$. Subtracting 3 from both sides gives $3x + 3 - 3 = 30 - 3$ or $3x = 27$. Dividing both sides by 3 to get "x" all by itself gives $3x / 3 = 27 / 3$ or $x = 9$. So $C = x = 9$, and $B = x + 1 = 9 + 1 = 10$, and $A = x + 1 + 1 = 9 + 1 + 1 = 11$. A quick check of $9 + 10 + 11 = 30$ for the perimeter distance proves that the answer of $x = 9$ is correct

Ratios

Example: An architect is drawing a scaled blueprint of an apartment building that is to be 100 feet wide and 250 feet long. On the drawing, if the building is 25 inches long, how many inches wide should it be.

Answer: Recognize the word "scaled" to indicate a similar drawing. Similar drawings or shapes can be solved using ratios. First, create the ratio fraction for the missing number, in this case the number of inches wide the drawing should be. The numerator of the first ratio fraction will be the matching known side, in this case "100 feet" wide. The question "100 feet wide is to how many inches wide?" gives us the first fraction of $100 / x$. The question "250 feet long is to 25 inches long?" gives us the second fraction of $250 / 25$. Again, note that both numerators (100 and 250) are from the same shape. The denominators ("x" and 25) are both from the same shape or drawing as well. Cross multiplication gives $100 * 25 = 250 * x$ or $2500 = 250x$. Dividing both sides by 250 to get x by itself yields $2500 / 250 = 250x / 250$ or $10 = x$.

Special Formulas

FOIL (First, Outer, Inner, Last)

When you are given a problem such as $(x + 2)(x - 3)$, you should use the FOIL method of multiplication. First, multiply the First parts of each equation ($x \cdot x$). Then multiply the Outer parts of each equation ($x \cdot -3$). Note that you should treat the minus 3 in the second equation as a negative 3. Then multiply the Inner parts of each equation ($2 \cdot x$). Finally, multiply the Last parts of each equation ($2 \cdot -3$). Once you are finished, add each part together $(x \cdot x) + (x \cdot -3) + (2 \cdot x) + (2 \cdot -3) = x^2 + -3x + 2x + -6 = x^2 - 3x + 2x - 6 = x^2 - 1x - 6 = x^2 - x - 6$.

Simple Probability

The probability problems on the ASVAB are fairly straightforward. The basic idea is this: the probability that something will happen is the number of possible ways that something can happen divided by the total number of possible ways for all things that can happen.

Example: I have 20 balloons, 12 are red, 8 are yellow. I give away one yellow balloon; if the next balloon is randomly picked, what is the probability that it will be yellow?

Answer: The probability is $7/19$, because after giving one away, there are 7 different ways that the “something” can happen, divided by 19 remaining possibilities.

Ratios

When a question asks about two similar shapes, expect a ratio problem.

Example: The figure below shows 2 triangles, where triangle $ABC \sim A'B'C'$. In these similar triangles, $a = 3$, $b = 4$, $c = 5$, and $a' = 6$. What is the value of b' ?

Answer: You are given the dimensions of 1 side that is similar on both triangles (a and a'). You are looking for b' and are given the dimensions of b . Therefore you can set up a ratio of $a/a' = b/b'$ or $3/6 = 4/b'$. To solve, cross multiply the two sides, multiplying $6 \cdot 4 = 3 \cdot b'$ or $24 = 3b'$. Dividing both sides by 3 ($24/3 = 3b'/3$) makes $8 = b'$, so 8 is the answer.

Note many other problems may have opportunities to use a ratio. Look for problems where you are trying to find dimensions for a shape and you have dimensions for a similar shape. These can nearly always be solved by setting up a ratio. Just be careful and set up corresponding measurements in the ratios. First decide what you are being asked for on shape B, represented by a variable, such as x . Then ask yourself, which side on similar shape A is the same size side as x . That is your first ratio fraction, set up a fraction like $2/x$ if 2 is the similar size side on shape A. Then find a side on each shape that is similar. If 4 is the size of another side on shape A and it corresponds to a side with size 3 on shape B, then your second ratio fraction is $4/3$. Note that 2 and 4 are the two numerators in the ratio fractions and are both from shape A. Also note that " x " the unknown side and 3 are both the denominators in the ratio fractions and are both from shape B.

Don't Panic

Panicking will not solve any problems for you. Therefore, it isn't helpful. When you first see the problem, if your mind goes completely blank, take a deep breath. Force yourself to mechanically go through the steps listed above for solving whichever problem type you are facing.

Secondly, don't get clock fever. It's easy to be overwhelmed when you're looking at a page full of problems, most of them are unanswered, your mind is full of random mathematical thoughts and feeling confused, and the clock is ticking down faster than you would like. You've prepared for this moment in advance, so don't sweat it. If you're stuck on a problem, eliminate what you would bet \$5, pick the first answer choice remaining, and move on! Don't feel like you have to get every answer right. You can always come back to it if you have enough time.

Check Your Work

One of the biggest mistakes that test takers will make are careless mistakes. Try your best to save a few minutes at the end to look back over the test. You might

be shocked at what you marked as the right answer and might be able to identify and correct those few problems that would have been missed otherwise.

Final Note

As mentioned before, word problems describing shapes should always be drawn out. Remember the old adage that a picture is worth a thousand words. If geometric shapes are described (line segments, circles, squares, etc) draw them out rather than trying to visualize how they should look.

On problems with variables, “plug and chug” by picking a number such as 1 or 2 and seeing if that would solve the problem. A 1 or 2 are good numbers to start with because they are easy to solve for with multiplication or division. If the 1 or 2 doesn’t answer the problem, you can try either a larger or a smaller number, until you finally reach the result.

Approach problems systematically. Take time to understand what is being asked for. In many cases there is a drawing or graph that you can write on. Draw lines, jot notes, do whatever is necessary to create a visual picture and to allow you to understand what is being asked.

Even if you have always done well in math, you may not succeed on the ASVAB. While math tests in high school and college test specific competencies in specific subjects, ASVAB frequently tests your ability to apply math concepts from vastly different math subjects in one problem. However, in few cases is any ASVAB Arithmetic Reasoning Test or Mathematics Knowledge Test problem more than two “layers” deep.

What does this mean for you? You can easily learn the ASVAB Arithmetic Reasoning Test and Mathematics Knowledge Test through taking multiple practice tests. If you have some gaps in your math knowledge, we suggest you

buy a more basic study guide to help you build a foundation before applying our secrets. Check out our special report to find out which study guide is worth your time.

AFQT Test #1

Arithmetic Reasoning

1. A man buys two shirts. One is \$7.50 and the other is \$3.00. A 6% tax is added to his total. What is his total?

- A. \$10.50
- B. \$11.13
- C. \$14.58
- D. \$16.80

2. If a chef can make 25 pastries in a day, how many can he make in a week?

- A. 32
- B. 74
- C. 126
- D. 175

3. A woman must earn \$250 in the next four days to pay a traffic ticket. How much will she have to earn each day?

- A. \$45.50
- B. \$62.50
- C. \$75.50
- D. \$100.50

4. A car lot has an inventory of 476 cars. If 36 people bought cars in the week after the inventory was taken, how many cars will remain in inventory at the end of that week?

- A. 440
- B. 476
- C. 484
- D. 512

5. A woman has \$450 in a bank account. She earns 5% interest on her end-of-month balance. How much interest will she earn for the month?
- A. \$5.00
 - B. \$22.50
 - C. \$427.50
 - D. \$472.50
6. Three children decide to buy a gift for their father. The gift costs \$78.00. One child contributes \$24.00. The second contributes \$15.00 less than the first. How much will the third child have to contribute?
- A. \$15.00
 - B. \$39.00
 - C. \$45.00
 - D. \$62.00
7. Two women have credit cards. One earns 3 points for every dollar she spends. The other earns 6 points for every dollar she spends. If they each spend \$5.00, how many combined total points will they earn?
- A. 15
 - B. 30
 - C. 45
 - D. 60
8. A company employing 540 individuals plans to increase its workforce by 13%. How many people will the company employ after the expansion?
- A. 527
 - B. 547
 - C. 553
 - D. 610

9. A 13 story building has 65 apartments. If each floor has an equal number of apartments, how many apartments are on each floor?

- A. 2
- B. 3
- C. 4
- D. 5

10. If 5 people buy 3 pens each and 3 people buy 7 pencils each, what is the ratio of the total number of pens to the total number of pencils?

- A. 15 : 21
- B. 3 : 7
- C. 5 : 7
- D. 1 : 1

11. A man earns \$15.23 per hour and gets a raise of \$2.34 per hour. What is his new hourly rate of pay?

- A. \$12.89
- B. \$15.46
- C. \$17.57
- D. \$35.64

12. How many people can travel on 6 planes if each carries 300 passengers?

- A. 1800
- B. 1200
- C. 600
- D. 350

13. In a town, the ratio of men to women is 2:1. If the number of women in the town is doubled, what will be the new ratio of men to women?

- A. 1:2
- B. 1:1

- C. 2:1
- D. 3:1

14. A woman weighing 250 pounds goes on a diet. During the first week, she loses 3% of her body weight. During the second week, she loses 2%. At the end of the second week, how many pounds has she lost?

- A. 12.50
- B. 10
- C. 12.35
- D. 15

15. A woman is traveling to a destination 583 km away. If she drives 78 km every hour, how many hours will it take for her to reach her destination?

- A. 2.22
- B. 3.77
- C. 5.11
- D. 7.47

16. If one gallon of paint can paint 3 rooms, how many rooms can be painted with 28 gallons of paint?

- A. 10
- B. 25
- C. 56
- D. 84

17. Five workers earn \$135/day. What is the total amount earned by the five workers?

- A. \$675
- B. \$700
- C. \$725
- D. \$750

18. A girl scores a 99 on her math test. On her second test, her score drops by 15. On the third test, she scores 5 points higher than she did on her second.

What was the girl's score on the third test?

A. 79

B. 84

C. 89

D. 99

19. A man goes to the mall with \$50.00. He spends \$15.64 in one store and \$7.12 in a second store. How much does he have left?

A. \$27.24

B. \$34.36

C. \$42.88

D. \$57.12

20. 600 students must share a school that has 20 classrooms. How many students will each classroom contain if there are an equal number of students in each class?

A. 15

B. 20

C. 25

D. 30

21. Four workers at a shelter agree to care for the dogs over a holiday. If there are 48 dogs, how many must each worker look after?

A. 8

B. 10

C. 12

D. 14

22. One worker has an office that is 20 feet long. Another has an office that is 6 feet longer. What is the combined length of both offices?

- A. 26 feet
- B. 36 feet
- C. 46 feet
- D. 56 feet

23. Four friends go shopping. They purchase items that cost \$6.66 and \$159.23. If they split the cost evenly, how much will each friend have to pay?

- A. \$26.64
- B. \$39.81
- C. \$41.47
- D. \$55.30

24. A 140 acre forest is cut in half to make way for development. What is the size of the new forest's acreage?

- A. 70
- B. 80
- C. 90
- D. 100

25. A farmer has 360 cows. He decides to sell 45. Shortly after, he purchases 85 more cows. How many cows does he have?

- A. 230
- B. 315
- C. 400
- D. 490

26. A couple plans to buy a car. They have \$569 in a joint bank account. The man has \$293 in additional cash and the woman has \$189. What is the most expensive car they will be able to afford?

- A. \$482
- B. \$758
- C. \$862
- D. \$1051

27. The temperature of a cup of coffee is 98 degrees. If its temperature decreases by 2 degrees per minute, what will its temperature be after 4 minutes?

- A. 100 degrees
- B. 98 degrees
- C. 94 degrees
- D. 90 degrees

28. A man's lawn grass is 3 inches high. He mows the lawn and cuts off 30% of its height. How tall will the grass be after the lawn is mowed?

- A. 0.9 inches
- B. 2.1 inches
- C. 2.7 inches
- D. 2.9 inches

29. Three outlets are selling concert tickets. One ticket outlet sells 432; another outlet sells 238; the third outlet sells 123. How many concert tickets were sold in total?

- A. 361
- B. 555
- C. 670
- D. 793

30. A boy has a bag with 26 pieces of candy inside. He eats 8 pieces of candy, then divides the rest evenly between two friends. How many pieces of candy will each friend get?

- A. 7

- B. 9
- C. 11
- D. 13

Word Knowledge

1. **Generous** most nearly means

- A. giving
- B. truthful
- C. selfish
- D. harsh

2. The math test was quite **challenging**.

- A. reasonable
- B. lengthy
- C. difficult
- D. simple

3. **Instructor** most nearly means

- A. pupil
- B. teacher
- C. survivor
- D. dictator

4. The audience applauded after the woman **concluded** her presentation.

- A. delivered
- B. prepared
- C. attended
- D. finished

5. **Residence** most nearly means

- A. home
- B. area
- C. plan
- D. resist

6. The company **instantly** agreed to the terms of the contract.

- A. reluctantly
- B. eventually
- C. immediately
- D. definitely

7. **Gigantic** most nearly means

- A. small
- B. great
- C. huge
- D. scary

8. The new car was very **costly**.

- A. expensive
- B. cheap
- C. attractive
- D. rare

9. **Opportunity** most nearly means

- A. event
- B. plan
- C. direction
- D. chance

10. The woman's **response** to the question was correct.

- A. hesitation

- B. answer
- C. decision
- D. concern

11. **Frequently** most nearly means

- A. difficulty
- B. freely
- C. often
- D. easy

12. He **observed** the eagles with binoculars.

- A. watched
- B. hunted
- C. scared
- D. sold

13. **Purchased** most nearly means

- A. sold
- B. bargained
- C. complained
- D. bought

14. She is having **difficulties** with her new computer.

- A. experiences
- B. solutions
- C. pleasures
- D. problems

15. **Entire** most nearly means

- A. whole
- B. divide

- C. tired
- D. basic

16. The woman's performance was **superior** to the man's.

- A. short
- B. similar
- C. better
- D. weak

17. **Remark** most nearly means

- A. rebuke
- B. comment
- C. lecture
- D. replace

18. **Selecting** the best person for the job was difficult.

- A. locating
- B. contacting
- C. choosing
- D. informing

19. **Commence** most nearly means

- A. begin
- B. progress
- C. finish
- D. comment

20. The fox ran **swiftly** after its prey.

- A. surely
- B. quickly
- C. slowly

D. lightly

21. **Overdue** most nearly means

A. overall

B. early

C. punctual

D. late

22. She felt intense **anguish** when her parents divorced.

A. loneliness

B. confusion

C. anger

D. sorrow

23. **Solitary** most nearly means

A. single

B. solid

C. sturdy

D. stoic

24. The class **chuckled** when the professor dropped his notes.

A. helped

B. commented

C. laughed

D. chose

25. **Depart** most nearly means

A. leave

B. describe

C. arrive

D. portion

26. The child was unable to **locate** his toy.

- A. buy
- B. find
- C. enjoy
- D. share

27. **Soiled** most nearly means

- A. dirty
- B. sullen
- C. sultry
- D. dainty

28. The bear **slumbered** in its cave.

- A. hunted
- B. fed
- C. slept
- D. explored

29. **Puzzled** most nearly means

- A. admired
- B. retired
- C. confused
- D. understand

30. The woman **desired** a new car.

- A. purchased
- B. wanted
- C. described
- D. intended

31. **Cheap** most nearly means

- A. cheer
- B. doubtfully
- C. cheat
- D. inexpensive

32. She is a very **intelligent** lady.

- A. pretty
- B. nice
- C. smart
- D. mysterious

33. **Object** most nearly means

- A. disagree
- B. state
- C. concur
- D. relate

34. The workers **constructed** the home over a three month period.

- A. purchased
- B. explored
- C. improved
- D. built

35. **Required** most nearly means

- A. needed
- B. wished
- C. studied
- D. wanted

Paragraph Comprehension

1. Mitosis refers to the process of cell division that occurs in most higher life forms. During interphase, all of the genetic material within the cell is replicated. Then, the strands that contain the genetic material, which are known as chromatin, become compacted and condensed. Centrosomes then move to opposite ends of the cells, after which the nucleus contained in the original single cell disintegrates.

Immediately before the chromatin becomes compacted,

- A. the genetic material in the cell is copied.
- B. the centrosomes move to opposite ends of the cell.
- C. the nucleus inside of the cell disintegrates.
- D. the process of mitosis takes place.

2. Obesity in the Western world has reached epidemic levels. While exercise is important to maintaining a healthy weight, healthy eating is even more important. Even the most active people cannot burn off hundreds of excess calories if they are consumed on a daily basis.

It can be concluded that

- A. most people need to exercise more.
- B. many people do not practice healthy eating.
- C. obesity would not be a problem if people were active.
- D. most people do not know how to choose healthy foods.

3. Racism is still a widespread problem in North America. For example, one man of Arab descent was held at an airport for hours for no apparent reason. The man said he was later told that officials thought he was carrying a bomb. An African-American woman was passed over for a promotion. She says the job went to a less qualified applicant.

The author is constructing her argument by

- A. relying on studies conducted by others.
- B. relying on the self-reported experiences of others.
- C. relying on events that she personally witnessed.
- D. relying on accepted facts and proven statistics.

4. *Beowulf* is an epic poem that is important because it is often viewed as the first significant work of English literature. Although it was first written in 700A.D., it is thought to be even hundreds of years older than that. It is believed that the story of *Beowulf* was told for centuries before it ever made its way on to paper. It is still taught today in various schools and universities.

Beowulf is a significant poem because

- A. it was first written down in 700A.D.
- B. it was told for centuries before it was written down.
- C. it is still taught today in academic settings.
- D. it is the first important work of English literature.

5. Cats are by far a superior pet compared to dogs. They are perfect for the working person, as they don't mind being left alone during the day. In addition, they are very easy to litter train. They require little care or effort, and are much cheaper to feed compared to dogs.

The author's purpose in writing this passage is

- A. to compare cats and dogs.
- B. to convince the reader that cats are better pets.
- C. to show why cats are cheaper to feed.
- D. to explain why cats are preferred to dogs.

6. Malaria is a dangerous disease that is still common in many countries. It is carried and transmitted to humans by female mosquitoes. When they bite humans or animals, the malaria parasite is introduced into the human's or animal's bloodstream. The parasites travel to the liver. There, they multiply, and soon they infect red blood cells. Malaria symptoms like fever will begin to be experienced at this point.

After the malaria parasites infect the red blood cells

- A. symptoms like fever occur.
- B. the parasites multiply.
- C. the parasites travel to the liver.
- D. malaria is transmitted by mosquitoes.

7. Many people feel that summer water sports are dangerous. While accidents do occur, the vast majority are preventable. For example, boating is a relatively safe activity, provided that life vests are worn and a reasonable speed is maintained. When diving, it's important to know the area well and be certain that water is deep enough. Finally, alcohol should never be consumed while engaging in water sports or activities. Following these simple tips would prevent many accidents.

The main idea expressed in the passage is

- A. summer sports are dangerous.
- B. many people who engage in water activities are careless.
- C. boating is a safe activity if precautions are followed.
- D. summer water activities aren't necessarily dangerous.

8. At one time, people who wanted to be writers had to write a query letter to a magazine and then wait weeks, sometimes months, for a response, which was usually a rejection. Today, with blogs, virtually anybody can put their work out there for others to view. It's as easy as setting up your blog, naming it, and

posting anything you want: opinions, poems, short stories, news articles, etc. Of course, while people who have blogs may choose to call themselves writers or journalists, it's unlikely they are making a living by putting their random thoughts out there into cyberspace.

It can be concluded that

- A. it is easier to make a living as a writer now.
- B. there are more people who want to be writers now.
- C. most people do not submit query letters to magazines anymore.
- D. there is no approval process for getting a blog.

9. Organic food has become quite popular in the last number of years, but the price of organic foods still prevents many people from eating them on a regular basis. People choose to buy organic foods because they are becoming more concerned about what types of chemicals, fertilizers, and pesticides are in their food. Organic food is usually relatively easily obtained by visiting a grocery store or a farmer's market, and the selection of foods is also quite good.

People don't eat organic food because

- A. it's hard to find.
- B. it contains chemicals.
- C. the selection is poor.
- D. it's too expensive.

10. Studies have shown again and again that birth order strongly influences the person one will eventually become. Oldest children have been shown to be more responsible and perform better in school. Younger children tend to do less well in school and be more free spirited. Cindy is a good example. She graduated on the Dean's list, and her parents report she always did her chores as a child.

It can be concluded that

- A. Cindy was an oldest child.
- B. Cindy was a youngest child.
- C. There have been no studies done on middle children.
- D. Birth order only matters if there are exactly two children.

11. Weddings put a substantial amount of stress on the bride, the groom, and their families. There is a large amount of planning that goes into a wedding, but the expenses are the major source of grief. The cake, the dress, and meals must all be purchased. The hall must be rented, the dj hired, and the invitations bought. By the time all is said and done, even a relatively simple wedding can cost in excess of \$10,000.

The main idea expressed in the passage is

- A. weddings are stressful.
- B. weddings require a lot of planning.
- C. weddings are a source of grief.
- D. weddings are expensive.

12. According to the laws of supply and demand, consumers will demand less of a good if the price is higher and more if it is lower. Conversely, suppliers will produce more of a good when the price is higher and less when it is lower.

If a supplier wanted to sell more of a good, they would

- A. reduce the supply.
- B. reduce the price.
- C. raise the price.
- D. increase the supply.

13. North America is currently dealing with a crisis. People have accumulated substantial amounts of debt. While consumers are partially to blame, much of the blame lies with the companies who actually granted the credit to consumers. This

crisis wouldn't have happened if loans were not granted to people who could not afford them.

Many people in North America are in debt because

- A. they choose not to pay their debts.
- B. they borrowed money they couldn't repay.
- C. companies refused to grant credit.
- D. they dealt with serious personal crises.

14. Knowing how to perform CPR properly can save another person's life. If you come across someone who is in trouble, call 911 right away. Then, lay them on their back. Next, open their airway by raising the chin. After this, but before beginning mouth to mouth, spend a few moments to determine whether they are breathing. If not, mouth to mouth and chest compressions will be necessary.

Before checking to see whether a person is breathing

- A. open their airway.
- B. begin mouth to mouth.
- C. learn how to perform CPR.
- D. begin chest compressions.

15. Using animals for fur is a barbaric practice that should be stopped. All across the world, animals are killed every day just to provide fashionable clothing. Fur is no longer necessary as it may once have been. There are now synthetic materials that can keep people just as warm during the winter months. In addition, the conditions on many fur farms are inhumane. Considering that fur-bearing animals are suffering to provide unnecessary luxury items, it is impossible to justify this sort of cruelty to animals.

The main idea expressed in this passage is

- A. nobody needs fur.

- B. fur animals are treated badly.
- C. fur is a luxury item.
- D. other materials are warmer than fur.

Mathematical Knowledge

1. A rectangle has a width of 7cm and a length of 9cm. What is its perimeter?

- A. 16cm
- B. 32cm
- C. 48cm
- D. 62cm

2. In the following inequality, solve for q.

$$-3q + 12 \geq 4q - 30$$

- A. $q \geq 6$
- B. $q = 6$
- C. $q \neq 6$
- D. $q \leq 6$

3. If $x - 6 = 0$, then x is equal to

- A. 0
- B. 3
- C. 6
- D. 9

4. If $x = -3$, calculate the value of the following expression:

$$3x^3 + (3x + 4) - 2x^2$$

- A. -104
- B. -58
- C. 58

D. 104

5. If $3x - 30 = 45 - 2x$, what is the value of x ?

A. 5

B. 10

C. 15

D. 20

6. Solve for x in the following inequality.

$$\frac{1}{4}x - 25 \geq 75$$

A. $x \geq 400$

B. $x \leq 400$

C. $x \geq 25$

D. $x \leq 25$

7. If $x^2 - 5 = 20$, what is the value of x ?

A. 5

B. 10

C. 12.5

D. 15

8. What is the area of a square that has a perimeter of 8cm?

A. 2cm^2

B. 4cm^2

C. 32cm^2

D. 64cm^2

9. If $x = 4$ and $y = 2$, what is the value of the following expression:

$$3xy - 12y + 5x$$

A. -4

B. 10

- C. 12
- D. 20

10. If $.65x + 10 = 15$, what is the value of x ?

- A. 4.92
- B. 5.78
- C. 6.45
- D. 7.69

11. Simply the following:

$$(3x + 5)(4x - 6)$$

- A. $12x^2 - 38x - 30$
- B. $12x^2 + 2x - 30$
- C. $12x^2 - 2x - 1$
- D. $12x^2 + 2x + 30$

12. Simplify the following expression:

$$\frac{50x^{18}t^6w^3z^{20}}{5x^5t^2w^2z^{19}}$$

- A. $10x^{13}t^3wz$
- B. $10x^{13}t^4wz$
- C. $10x^{12}t^4wz$
- D. $10x^{13}t^4wz^2$

13. $4! =$

- A. 4
- B. 12
- C. 16
- D. 24

14. If a cube is 5cm long, what is the volume of the cube?

- A. 15cm^3
- B. 65cm^3
- C. 105cm^3
- D. 125cm^3

15. Solve for x by factoring:

$$x^2 - 13x + 42 = 0$$

- A. $x = 6, 7$
- B. $x = -6, -7$
- C. $x = 6, -7$
- D. $x = -6, 7$

16. A triangle has a base measuring 12cm and a height of 12cm. What is its area?

- A. 24cm^2
- B. 56cm^2
- C. 72cm^2
- D. 144cm^2

17. Simply the following expression:

$$(3x^2 * 7x^7) + (2y^3 * 9y^{12})$$

- A. $21x^{14} + 18y^{26}$
- B. $10x^9 + 11y^{15}$
- C. $21x^{14} + 18y^{15}$
- D. $21x^9 + 18y^{15}$

18. If $x/3 + 27 = 30$, what is the value of x?

- A. 3
- B. 6
- C. 9
- D. 12

19. What is the slope of a line with points A (4,1) and B (-13,8)?
- A. $7/17$
 - B. $-7/17$
 - C. $-17/7$
 - D. $17/7$
20. If x is 20% of 200, what is the value of x ?
- A. 40
 - B. 80
 - C. 100
 - D. 150
21. If a bag of balloons consists of 47 white balloons, 5 yellow balloons, and 10 black balloons, what is the probability that a balloon chosen randomly from the bag will be black?
- A. 19%
 - B. 16%
 - C. 21%
 - D. 33%
22. In a lottery game, there are 2 winners for every 100 tickets sold. If a man buys 10 tickets, what are the chances that he is a winner?
- A. 1 in 2
 - B. 1 in 5
 - C. 2 in 5
 - D. 2 in 2
23. What is the volume of a rectangular with a height of 10cm, a length of 5cm, and a width of 6cm?
- A. 30cm^3

- B. 60cm^3
- C. 150cm^3
- D. 300cm^3

24. What is the midpoint of point A (6, 20) and point B (10, 40)?

- A. (30, 8)
- B. (16, 60)
- C. (8, 30)
- D. (7, 15)

25. If $5x + 60 = 75$, what is the value of x ?

- A. 3
- B. 4
- C. 5
- D. 6

Answer Key

Arithmetic Reasoning

1. B

First, find the total before taxes: $\$7.50 + \$3.00 = \$10.50$

Then, calculate 6% of the total: $\$10.50 * .06 = \0.63

Finally, add the tax to find the total cost: $\$10.50 + \$0.63 = \$11.13$

2. D

There are 7 days in a week. Knowing that the chef can make 25 pastries in a day, the weekly number can be calculated:

$$25 * 7 = 175$$

3. B

The woman has four days to earn \$250. To find the amount she must earn each day, divide the amount she must earn (\$250) by 4:

$$\$250 / 4 = \$62.50$$

4. A

To find the number of cars remaining, subtract the number of cars that were sold from the original number: $476 - 36 = 440$

5. B

Calculate 5% of \$450: $\$450 * 0.05 = \22.50

This is the amount of interest she will earn.

6. C

First, figure out how much the second child contributed: $\$24.00 - \$15.00 = \$9.00$

Then, calculate how much the first two children contributed in total: $24 + 9 = \$33.00$

Finally, figure out how much the third child will have to contribute:

$$\$78.00 - \$33.00 = \$45.00$$

7. C

First, figure out how many points the first woman will earn: $3 * 5 = 15$

Then, figure out how many points the second woman will earn: $6 * 5 = 30$

Then, add these two values together: $30 + 15 = 45$ points total.

8. D

First, calculate 13% of 540 = 70

Then, add this value onto the original number of workers: $540 + 70 = 610$

610 is the number of people that the company will employ after the expansion.

9. D

To find the number of apartments on each floor, divide the total number of apartments by the number of floors:

$$65 / 13 = 5$$

10. A

First, find the total number of pens: $5 * 3 = 15$

Then, find the total number of pencils: $3 * 7 = 21$

Finally, express it as a ratio 15 : 21

11. C

To calculate his new salary, add his raise to his original salary:

$$\$15.23 + \$2.34 = \$17.57$$

12. A

To find the total number of passengers, multiply the number of planes by the number of passengers each can hold: $6 * 300 = 1800$

13. B

Currently, there are two men for every woman. If the number of women is doubled

($1 * 2 = 2$), then the new ratio is 2:2. This is equivalent to 1:1.

14. C

First, calculate 3% of 250 pounds: $250 * 0.03 = 7.5$ pounds

Calculate how much she weighs at the end of the first week: $250 - 7.5 = 242.5$ pounds

Calculate 2% of 242.5: $242.5 * 0.02 = 4.85$ pounds

Add the two values together to get the total: $7.5 + 4.85 = 12.35$

15. D

Divide the total distance she must travel (583km) by the number of kilometres she drives each hour (78km) to figure out how many hours it will take to reach her destination:

$$583 \text{ km} / 78 \text{ km} = 7.47 \text{ hours}$$

16. D

One gallon of paint can paint three rooms, so to find out how many 28 gallons can do, that number must be multiplied by 3: $28 * 3 = 84$ rooms

17. A

Each earns \$135, so to find the total earned, that amount must be multiplied by the number of workers: $\$135 * 5 = \675

18. C

First, calculate her score on the second test: $99 - 15 = 84$

Then, calculate her score on the third test: $84 + 5 = 89$

19. A

To find out how much he has remaining, both numbers must be subtracted from the original amount (\$50.00): $\$50.00 - \$15.64 - \$7.12 = \27.24

20. D

Divide the number of students (600) by the number of classrooms they will share (20):

$$600 / 20 = 30$$

21. C

To calculate this value, divide the number of dogs (48) by the number of workers that are available to care for them (4):

$$48 / 4 = 12$$

22. C

First, calculate the length of the second office: $20 + 6 = 26$ feet

Then, add both values together to get a combined length: $26 + 20 = 46$ feet

23. C

Find the total cost of the items: $\$6.66 + \$159.23 = \$165.89$

Then, calculate how much each individual will owe: $\$165.89 / 4 = \41.47

24. A

To answer this question, simply calculate half of 140 acres: $140 / 2 = 70$ acres

25. C

First, calculate how many he has after selling 45: $360 - 45 = 315$

Then, calculate how many he has after buying 85: $315 + 85 = 400$

26. D

Calculate the total amount of money the couple has available to spend, which is the amount in the joint bank account and the amount that each has:

$$\$569 + \$293 + \$189 = \$1051$$

27. D

First, find out what the total temperature decrease will be after 4 minutes:

$$2 * 4 = 8 \text{ degrees}$$

Then, subtract that from the original temperature: $98 - 8 = 90$ degrees

28. B

First, calculate 30% of 3 inches: $3 * 0.3 = 0.9$ inches.

Then, subtract this value from the original length: $3 - 0.9 = 2.1$

29. D

Add the number of tickets that were sold at each location to get the total number of tickets sold: $432 + 238 + 123 = 793$

30. B

First, figure out how many pieces of candy are in the bag before they are divided:

$$26 - 8 = 18$$

Then, figure out how many pieces each friend will get by dividing by 2: $18 / 2 = 9$

Word Knowledge

1. A

When it is said that someone is generous, it usually means they are giving and unselfish.

2. C

When something is described as challenging, it usually means that it is difficult or demanding.

3. B

A teacher provides instruction and information to an individual or group of individuals. An instructor functions in the same capacity, that is, in the practice of teaching.

4. D

When something is concluded, it means that it is finished or completed.

5. A

A residence is a place where a person lives; the term is often used to refer to someone's home.

6. C

To say something was done instantly means that it was done immediately and without hesitation.

7. C

Something that is described as gigantic is extremely large, or huge, in size.

8. A

Something that is costly is expensive. It costs a lot of money.

9. D

An opportunity is a chance to do something. For example, saying someone was given the *opportunity* to go to school or saying somebody was given the *chance* to go to school conveys the same meaning.

10. B

A response is also commonly known as an answer. A response to a question carries the same meaning as an answer to a question.

11. C

To say that something is done frequently implies that it is done regularly or often.

12. A

Something that is being observed is being watched. Binoculars are used to see things more clearly, so it makes sense that the man would be observing or watching eagles with binoculars.

13. D

Saying that somebody purchased something and saying they bought something conveys the same meaning.

14. D

The word difficulty implies hardship. When it is said that somebody is having difficulties with another person or thing, it usually means they are experiencing problems.

15. A

When it is said that something is entire, it usually means that it is still whole. For example, if someone says they ate an entire apple, it is the same as saying they ate a whole apple.

16. C

To say something is superior to something else usually implies that it is better.

17. B

A remark is a spoken statement, also commonly known as a comment. To say somebody made a remark conveys the same meaning as saying they made a comment.

18. C

When a selection is being made, it involves making a choice between several options. Selecting something is the same as choosing something.

19. A

To commence something is to begin or start something.

20. B

When something is done swiftly, it means that it is done fast or quickly.

21. D

When something is overdue, it means that it is late. For example, when a bill is overdue, it means that it has not been paid on time.

22. D

Somebody who is experiencing or feeling anguish is experiencing sorrow or sadness.

23. A

Solitary can mean a number of different things, but one meaning is single. For example, if you said there was a solitary tree in a yard, you would mean that there was a single tree.

24. C

Chuckled is a synonym for laughed. To say somebody chuckled or to say that somebody laughed conveys the same meaning.

25. A

If somebody or something is departing from somewhere, it means they are leaving. For example, to say the train departed from the station is the same as saying the train left the station.

26. B

To locate something that is lost or misplaced is to find it. For example, the child could not locate (find) his toy.

27. A

Something that is soiled is stained or dirty. When somebody says their clothing is soiled, it is the same as saying their clothing is dirty.

28. C

Slumber is another word for sleep. Saying someone slumbered is the same as saying they slept.

29. C

If somebody is puzzled about something, it implies confusion or bewilderment. For example, to say that a man was puzzled by the woman's reaction means that the man was confused by her reaction.

30. B

To desire something is to want something. Saying that a woman desired a new car has the same meaning as saying the woman wanted a new car.

31. D

Something that is cheap does not cost a substantial amount of money. Saying something is cheap and saying that something is inexpensive conveys the same meaning.

32. C

When somebody is described as intelligent, it usually means that they are smart.

33. A

When somebody objects to something, it means that they disagree with it. A person who objects to the expression of a specific political opinion may be said to disagree with it.

34. D

Constructed most nearly means built. If you say a home is constructed out of wood, for example, it conveys the same meaning as saying the home is built out of wood.

35. A

Something that is required is needed. For example, if you say you require ten dollars to buy lunch, it implies that you need ten dollars for lunch.

Paragraph Comprehension

1. A

The passage states: “During interphase, all of the genetic material within the cell is replicated. Then, the strands that contain the genetic material, which are known as chromatin, become compacted and condensed.” According to the passage, the material in the cell is copied (replicated) before the chromatin becomes compacted into strands.

2. B

The conclusion that many people do not practice healthy eating can be made based on two points in the passage. First, we are told that many people are obese. Second, it is stated that healthy eating is more important to maintaining a healthy weight than exercise activity. Therefore, if a large number of people are overweight, and eating unhealthy foods is the major contributor to obesity, it can be concluded that many people do not practice healthy eating.

3. B

The author is relying on experiences that were reported by others. This is evident through the use of such phrases as “he said that he was later told” and “she says the job went to a less qualified applicant.”

4. D

The work is important because “it is often viewed as the first significant work of English literature.”

5. B

The purpose of the passage is to convince the reader that cats are better pets than dogs. This is stated in the opening sentence when the author states “Cats are by far a superior pet compared to dogs.” Also, the remainder of the passage describes the advantages of cats as pets. Any time cats are compared to dogs, cats are described as superior pets.

6. A

After the malaria parasites infect the red blood cells, symptoms like fever occur. The passage states that “There, they multiply, and soon they infect red blood cells. Malaria symptoms like fever will begin to be experienced at this point.”

7. D

The main idea in this passage is that water sports don’t have to be dangerous. The passage states “Many people feel that summer time water sports are dangerous. While accidents do occur, the vast majority are preventable.” Also, the rest of the passage focuses on outlining what precautions can be taken to ensure that water sports are less risky.

8. D

This can be concluded based on the section of the passage that states “Today, with blogs, virtually anybody can put their work out there for others to view. It’s as easy as setting up your blog, naming it, and posting anything you want.”

9. D

Many people still do not buy organic food because it is too expensive. The passage states “the price of organic foods still prevents many people from eating them on a regular basis.”

10. A

It is reasonable to conclude that the author mentioned Cindy because it would strengthen the argument that birth order affects personality traits. The passage states that oldest children are more responsible and perform better in school. Since Cindy was on the Dean’s list (good academic performance) and did her chores as a child (a sign of responsibility), it is reasonable to assume that Cindy was an oldest child.

11. D

The main idea discussed in the passage is that weddings are expensive. The author states that the expense of a wedding is a major source of stress. Then, the author discusses many of the expenses involved, finally providing an example of the high cost of a simple wedding.

12. B

A supplier should reduce the price of a good if they want to sell more of it because, according to the passage, “consumers will demand less of a good if the price is higher *and more if it is lower.*”

13. B

According to the passage, many people are in debt in North America because they borrowed money they could not afford to repay. The passage states that “much of the blame lies with the companies who actually granted the credit to consumers. This debt crisis wouldn’t have happened if loans were not granted to people who could not afford them.”

14. A

The person’s airway should be opened before checking whether they are breathing. The passage advises the rescuer to “open their airway by raising the chin. After this, but before beginning mouth to mouth, spend a few moments to determine whether they are breathing.” Mouth to mouth and chest compressions are only done if the person is not breathing.

15. A

The main idea of the passage is that fur is an unnecessary material good. The author provides two statements to support the main theme. First, the author notes that there are synthetic materials which can keep people warm, so fur is no

longer necessary. Second, the author states that fur is used to produce luxury items which are not really needed by anyone.

Mathematical Knowledge

1. B

The perimeter of a figure is the sum of all of its sides. Since a rectangle's width and length will be the same on opposite sides, the perimeter of a rectangle can be calculated by using the following formula: $\text{perimeter} = 2(\text{width}) + 2(\text{length})$

Using the numbers given in the question:

$$\text{perimeter} = 2(7\text{cm}) + 2(9\text{cm})$$

$$\text{perimeter} = 14\text{cm} + 18\text{cm}$$

$$\text{perimeter} = 32\text{cm}$$

2. D

First, gather the like terms on opposite sides of the equation to make it easier to solve:

$$-3q - 4q \geq -30 - 12$$

$$-7q \geq -42$$

Then, divide both sides by -7 to solve for q :

$$-7q/-7 \geq -42/-7$$

$$q \geq 6$$

Finally, when both sides are divided by a negative number, the direction of the sign must be reversed:

$$q \leq 6$$

3. C

To solve for x , it is necessary to add 6 to both sides to isolate the variable:

$$x - 6 + 6 = 0 + 6$$

$$x = 6$$

4. A

To calculate the value of this expression, substitute -3 for x each time it appears in the expression: $3(-3)^3 + (3(-3) + 4) - 2(-3)^2$

According to the order of operations, any operations inside of brackets must be done first:

$$3(-3)^3 + (-9 + 4) - 2(-3)^2$$

$$3(-3)^3 + -5 - 2(-3)^2$$

Then, the value of the expression can be calculated:

$$3(-27) + -5 - 2(9)$$

$$-81 + -5 - 18$$

$$-104$$

5. C

First, combine like terms to make the equation easier to solve:

$$3x + 2x = 45 + 30$$

$$5x = 75$$

Then, divide both sides by 5 to solve for x:

$$5x/5 = 75/5$$

$$x = 15$$

6. A

First, add 25 to both sides to isolate x:

$$1/4x - 25 + 25 \geq 75 + 25$$

$$1/4x \geq 100$$

Then, multiply both sides by 4 to solve for x:

$$1/4x * 4 \geq 100 * 4$$

$$x \geq 400$$

7. A

First, add 5 to both sides to isolate x:

$$x^2 - 5 + 5 = 20 + 5$$

$$x^2 = 25$$

Then, take the square root of both sides to solve for x

$$\sqrt{x^2} = \sqrt{25}$$

$$x = 5$$

8. B

First, we must calculate the length of one side of the square. Since we know the perimeter is 8cm, and that a square has 4 equal sides, the length of each side can be calculated by dividing the perimeter (8cm) by 4: $8\text{cm} / 4 = 2\text{cm}$

The formula for the area of a square is length^2

Therefore, to calculate the area of this square: 2cm^2 or $2\text{cm} * 2\text{cm}$

$$\text{Area} = 4\text{cm}^2$$

9. D

To find the value of this expression, substitute the given values for x and y into the expression: $3(4)(2) - 12(2) + 5(4)$

Then, calculate the value of the expression:

$$3*8 - 12*2 + 5*4$$

$$24 - 24 + 20$$

$$20$$

10. D

First, subtract 10 from both sides to isolate x:

$$0.65x + 10 - 10 = 15 - 10$$

$$0.65x = 5$$

Then, divide both sides by 0.65 to solve for x:

$$0.65x/0.65 = 5/0.65$$

$$x = 7.69$$

11. B

Use the FOIL method (first, outside, inside, and last) to get rid of the brackets:

$$12x^2 - 18x + 20x - 30$$

Then, combine like terms to simplify the expression:

$$12x^2 - 18x + 20x - 30$$

$$12x^2 + 2x - 30$$

12. B

To simplify this expression, it is necessary to follow the law of exponents that states: $x^n/x^m = x^{n-m}$

First, the 50 can be divided by 5: $50/5 = 10$

Then, it is simply a matter of using the law of exponents described above to simplify the expression:

$$10x^{18-5}t^{6-2}w^{3-2}z^{20-19}$$

$$10x^{13}t^4wz$$

13. D

To calculate the value of this permutation, it is necessary to multiply each number between one and 4: $1 * 2 * 3 * 4 = 24$

14. D

Because it is a cube, it is known that the width and the height of the cube is also 5cm. Therefore, to find the volume of the cube, we must cube 5cm: 5cm^3

This is the same as: $5 * 5 * 5 = 125$

The volume of the cube is 125cm^3 .

15. A

First, factor this equation to make solving for x easier:

$$(x - 6)(x - 7) = 0$$

Then, solve for both values of x:

$$1) x - 6 = 0$$

$$x = 6$$

$$2) x - 7 = 0$$

$$x = 7$$

16. C

The area of a triangle can be calculated by using the following formula: $A = \frac{1}{2}b \cdot h$

Therefore, by using the values given in the question:

$$A = \frac{1}{2}(12\text{cm}) \cdot 12\text{cm}$$

$$A = 6\text{cm} \cdot 12\text{cm}$$

$$A = 72\text{cm}^2$$

17. D

To simplify this expression, it is necessary to observe the law of exponents that states:

$$x^n \cdot x^m = x^{n+m}$$

$$\text{Therefore: } 3 \cdot 7x^{7+2} + 2 \cdot 9y^{12+3}$$

$$21x^9 + 18y^{15}$$

18. C

First, subtract 27 from both sides to isolate x:

$$\frac{x}{3} + 27 - 27 = 30 - 27$$

$$\frac{x}{3} = 3$$

Then, both sides must be multiplied by 3 to solve for x:

$$3\left(\frac{x}{3}\right) = 3 \cdot 3$$

$$x = 9$$

19. B

To find the slope of a line, it is necessary to calculate the change in y and the change in x:

$$\text{Change in y: } 1 - 8 = -7$$

$$\text{Change in x: } 4 - (-13) = 17$$

The slope of a line is expressed as change in y over change in x: $-\frac{7}{17}$

20. A

To solve for x, it is necessary to calculate the value of 20% of 200:

$$200 * 0.20 = 40$$

Therefore, $x = 40$

21. B

First, calculate the total number of balloons in the bag: $47 + 5 + 10 = 62$

Ten of these are black, so divide this number by 62, then multiply by 100 to express the probability as a percentage:

$$10 / 62 = 0.16$$

$$0.16 * 100 = 16\%$$

22. B

First, it is easier to find out how many tickets are sold for one winner.

If there are 2 winners for every 100 tickets, there is 1 winner for every 50 tickets.

If ten tickets are bought, the chances of winning are 10 in 50.

This can also be expressed as 1 in 5.

23. D

To find the volume of a rectangle, the formula is length * width * height.

Therefore, for this rectangle volume = $10\text{cm} * 5\text{cm} * 6\text{cm}$

The volume of this rectangle is 300cm^3

24. C

To calculate the midpoint of a line, find the sum of the points and divide by two.

For x, the midpoint can be calculated as follows: $6 + 10 = 16$ $16/2 = 8$

For y, the midpoint can be calculated as follows: $40 + 20 = 60$ $60/2 = 30$

Therefore, the midpoint is (8, 30)

25. A

First, subtract 60 from both sides to isolate x:

$$5x + 60 - 60 = 75 - 60$$

$$5x = 15$$

Then, divide both sides by 5 to solve for x:

$$5x/5 = 15/5$$

$$x = 3$$

AFQT Test #2

Arithmetic Reasoning

1. A florist has 733 flowers. How many full bouquets of 16 flowers can he make?

- A. 44
- B. 45
- C. 46
- D. 47

2. A woman owns a dog walking business. If 2 workers can walk 8 dogs, how many dogs can 3 workers walk?

- A. 10
- B. 12
- C. 14
- D. 16

3. A steak dinner at a restaurant costs \$15.99. If a man buys a steak dinner for himself and 4 friends, what will the total cost be?

- A. \$63.96
- B. \$68.45
- C. \$74.76
- D. \$79.95

4. A woman has two bank accounts. One contains \$329 and awards 4% in interest each month. The other contains \$921 and awards 7% in interest each month. What will the combined value of her two accounts be at the end of the month?

- A. \$342.08
- B. \$985.47
- C. \$1250.00

D. \$1327.63

5. Four co-workers contributed \$2.58, \$10.20, \$19.89, and \$12.89 respectively to purchase a retirement gift for their boss. What is the maximum amount they can spend on a gift?

A. \$32.67

B. \$32.78

C. \$42.98

D. \$45.56

6. A grocery manager sells 2 bags of potatoes for each bag of carrots. He also sells 6 bags of onions for each bag of potatoes. If he sells 12 bags of onions, how many bags of carrots will he sell?

A. 1

B. 2

C. 3

D. 4

7. A man invested \$150 in the stock market. During the first week, he lost \$45. During the second week, he tripled his money. How much does he have at the end of the second week?

A. \$105

B. \$210

C. \$315

D. \$420

8. A woman must drive 298 miles to reach her destination. If she travels 42 miles during the first day, how many miles will she have yet to travel?

A. 225

B. 256

C. 271

D. 286

9. A baker uses 6 eggs to bake a cake. How many cakes will he be able to bake with 145 eggs?

A. 23

B. 24

C. 25

D. 26

10. A man goes to the grocery store. He buys a carton of milk for \$4.50, a dozen eggs for \$2.25, and a pound of ground beef for \$1.99. If the tax is 15%, what will his total bill be?

A. \$7.76

B. \$8.74

C. \$10.05

D. \$13.27

11. Three people go to a restaurant. Their bill comes to \$78.00. They decide to split the cost. One person pays \$4.50; the next person pays 3 times that amount. How much will the third person have to pay?

A. \$60.00

B. \$66.00

C. \$70.50

D. \$73.50

12. If one acre of forest contains 294 pine trees, how many pine trees are contained in 25 acres?

A. 6468

B. 6762

C. 7056

D. 7350

13. A diver can hold his breath for two minutes under water. After practicing for a week, he can hold his breath for 5% longer. How long will he be able to hold his breath after the first week of practice?

- A. 0.1 minutes
- B. 2.01 minutes
- C. 2.1 minutes
- D. 3.0 minutes

14. A woman weighs 145 pounds. She gains 12 pounds one month and 6 pounds the next month. What is her new weight?

- A. 148 pounds
- B. 151 pounds
- C. 157 pounds
- D. 163 pounds

15. A man goes to a casino with \$125. He loses \$30 on blackjack, then loses another \$40 on roulette. How much money does he have left?

- A. \$35
- B. \$40
- C. \$55
- D. \$70

16. A man is training to run five miles. During the first week he ran 3.7 miles. During the second week he could run 13% farther. How many more miles will he have to run to reach his goal?

- A. 0.48
- B. 0.82
- C. 4.18
- D. 4.52

17. A woman earns \$65,000 each year. She must pay 36% of this amount (\$65,000) in income tax. How much income tax does the woman pay each year?

- A. \$14,300
- B. \$23,400
- C. \$32,800
- D. \$41,600

18. A woman earns \$750 each week. If she pays \$260 in taxes, how much does she have left?

- A. \$490
- B. \$500
- C. \$510
- D. \$520

19. A cafeteria requires 3 workers for every 24 students. How many workers will be needed for a school with 136 students?

- A. 8
- B. 13
- C. 17
- D. 24

20. A woman buys 23 pounds of potatoes. She gives 10% of them to a neighbor and 15% of them to her mother. How many pounds does she have left?

- A. 20.7 pounds
- B. 19.55 pounds
- C. 17.25 pounds
- D. 12.63 pounds

21. If one person consumes 8 glasses of water on a daily basis, how many glasses of water will 18 people consume?

- A. 26

- B. 64
- C. 128
- D. 144

22. If one dog eats 5 pounds of food each week, how many dogs will 65 pounds of food feed for a week?

- A. 11
- B. 12
- C. 13
- D. 14

23. A woman has 60 ornaments. She decides to divide them evenly among her 3 grandchildren. How many ornaments will each child receive?

- A. 10
- B. 15
- C. 20
- B. 30

24. If one van can carry 6 people, how many vans are needed to carry 250 people?

- A. 40
- B. 41
- C. 42
- D. 43

25. A man owns a store. One week he sells 100 loaves of bread. If he sells twice as many loaves the next week, how many loaves did he sell in total?

- A. 150
- B. 200
- C. 250
- D. 300

26. A classroom has 15 boys and 13 girls. If 10 more girls join the class, what is the ratio of girls to boys?

- A. 15 : 23
- B. 13 : 15
- C. 10 : 15
- D. 23 : 15

27. A duck pond has 350 ducks. If 75 go south for the winter, how many ducks will still be in the pond?

- A. 250
- B. 275
- C. 300
- D. 325

28. A child is selling bars for a school fundraiser. He starts out with 65. If he has 13 left, how many did he sell?

- A. 52
- B. 54
- C. 56
- D. 58

29. A man works three jobs. In one week, he earns \$500 at one, \$65 at the second, and \$175 at the third. What is his total weekly salary?

- A. \$240
- B. \$565
- C. \$675
- D. \$740

30. If one plant requires 2 liters of water each day, how many liters are required to water the plant for 13 days?

- A. 6.5 liters
- B. 15 liters
- C. 26 liters
- D. 39 liters

Word Knowledge

1. The word **spoiled** most nearly means
 - A. ruined
 - B. splendid
 - C. told
 - D. believed

2. He made an **oath** to his king.
 - A. delivery
 - B. promise
 - C. statement
 - D. criticism

3. **Inquire** most nearly means
 - A. invest
 - B. ask
 - C. tell
 - D. release

4. Spanish is a difficult language to **comprehend**.
 - A. learn
 - B. speak
 - C. understand
 - D. appreciate

5. **Apparent** most nearly means

- A. clear
- B. occasional
- C. angry
- D. applied

6. They enjoyed the **silence** of the night.

- A. darkness
- B. excitement
- C. quiet
- D. mood

7. **Absolutely** most nearly means

- A. completely
- B. rapidly
- C. assuredly
- D. weakly

8. He **modified** his schedule so he could attend the staff lunch.

- A. checked
- B. shortened
- C. considered
- D. changed

9. **Delicate** most nearly means

- A. fragile
- B. sturdy
- C. loud
- D. soft

10. She attended the New Year's **festivities**.

- A. commitments
- B. celebrations
- C. crowds
- D. dates

11. **Exhausted** most nearly means

- A. excited
- B. tired
- C. worried
- D. energized

12. She **cleansed** her face in the morning.

- A. examined
- B. washed
- C. touched
- D. dried

13. **Battled** most nearly means

- A. fought
- B. attempt
- C. bold
- D. saw

14. He **wandered** around the mall.

- A. looked
- B. shopped
- C. roamed
- D. searched

15. **Abruptly** most nearly means

- A. homely

- B. commonly
- C. wisely
- D. suddenly

16. He was **tricked** into giving her money.

- A. conned
- B. begged
- C. convinced
- D. nagged

17. **Extremely** most nearly means

- A. almost
- B. slightly
- C. very
- D. clearly

18. She was **doubtful** whether the plan would work.

- A. uncertain
- B. panicked
- C. pondering
- D. indifferent

19. **Peculiar** most nearly means

- A. original
- B. novel
- C. dull
- D. strange

20. He is a very **courteous** young man.

- A. handsome
- B. polite

- C. inconsiderate
- D. odd

21. **Troubled** most nearly means

- A. relieved
- B. satisfied
- C. bothered
- D. relaxed

22. **Perspiration** most nearly means

- A. sweat
- B. work
- C. help
- D. advice

23. The child **trembled** with fear.

- A. spoke
- B. shook
- C. wept
- D. ducked

24. **Adhered** most nearly means

- A. stuck
- B. went
- C. spoke
- D. altered

25. She kept her house **tidy**.

- A. furnished
- B. warm
- C. locked

D. neat

26. **Sketch** most nearly means

- A. skip
- B. scope
- C. draw
- D. drain

27. The child was **frightened** by the movie.

- A. scared
- B. entertained
- C. amused
- D. saddened

28. **Sever** most nearly means

- A. hard
- B. cut
- C. add
- D. soft

29. Her prediction was **accurate**.

- A. correct
- B. false
- C. funny
- D. planned

30. **Taunt** most nearly means

- A. truant
- B. tried
- C. tight
- D. tease

31. Her concern for him was **sincere**.

- A. intense
- B. genuine
- C. brief
- D. misunderstood

32. **Disclose** most nearly means

- A. reveal
- B. return
- C. near
- D. hide

33. He **sprinted** down the road.

- A. crawled
- B. walked
- C. hurried
- D. ran

34. The naughty child was **disciplined**.

- A. upset
- B. punished
- C. hidden
- D. bad

35. **Seize** most nearly means

- A. grab
- B. release
- C. tell
- D. fight

Paragraph Comprehension

1. The so-called anti-aging industry is worth a staggering amount of money in North America. Women are sold all sorts of creams and ointments, and are promised that these will make them look younger over time. Unfortunately, these claims are entirely false. Lotions cannot penetrate to the inner layers of the skin where wrinkles typically form. Therefore, no over-the-counter creams are effective at erasing lines and wrinkles.

According to the author, the anti-aging industry

- A. targets its products at men and women equally.
- B. sells products that are highly effective.
- C. is still a relatively small industry.
- D. sells goods that do not do what they promise.

2. There is a clear formula that many students are taught when it comes to writing essays. The first is to develop an introduction, which outlines what will be discussed in the work. It also includes the thesis statement. Next comes the supporting paragraphs. Each paragraph contains a topic sentence, supporting evidence, and finally a type of mini-conclusion that restates the point of the paragraph. Finally, the conclusion sums up the purpose of the paper and emphasizes that the thesis statement was proven.

After the topic sentence,

- A. a thesis statement is included.
- B. supporting evidence is presented.
- C. the conclusion is stated.
- D. the author outlines what will be discussed.

3. The importance of a comfortable work space cannot be overstated. Developing a comfortable work environment is relatively simple for employers.

Ergonomic chairs, large computer screens, personal desk space, and some level of privacy are all essential. This involves some expense, but not a great deal. Not surprisingly, employees are happier in this type of environment, but it is the employers who really benefit. Reduced sick time, higher levels of employee satisfaction, higher productivity, and more creativity have all been observed.

The main idea expressed in this passage is

- A. a comfortable work space is not as important as people say.
- B. developing a comfortable work space is easy.
- C. establishing a comfortable work space is not expensive.
- D. employers benefit greatly when they provide comfortable work spaces.

4. Planning weddings is tough. One important part of the planning process is choosing bridesmaid dresses. Although there used to be a lot of rules when it came to picking out a color, many of them are not observed any more. However, one that is still observed is that the bridesmaids should not wear the same color as the bride. The most popular colors for bridesmaid dresses in recent years have been white and black.

It can be concluded that

- A. picking dresses is the hardest part of planning a wedding.
- B. many brides are choosing to wear colors other than white.
- C. most bridesmaids are allowed to choose their own dress.
- D. bridesmaids were not traditionally allowed to wear black.

5. Those so-called green fuels may not be as environmentally friendly as once thought. For example, producing natural gas is a much more labor intensive process than producing an equal amount of conventional gasoline. Also, producing natural gas involves burning fossil fuels. Transporting natural gas also involves burning fossil fuels.

The weakness of green fuels is that

- A. they are not as abundant as conventional fuel.
- B. they require a lot more work to produce.
- C. burning them releases fossil fuels.
- D. they must be transported greater distances.

6. The media has done a lot to promote racism in North America. For example, it was found that the majority of crimes discussed on the nightly news featured African American suspects. However, when the total number of crimes committed in North American was examined, it was found that white people were also suspects 50% of the time.

If the above information were true, it could be concluded that

- A. there are more white criminals than African American criminals.
- B. most people believe that African Americans commit more crimes.
- C. many crimes committed by white people are not discussed on the news.
- D. the total number of crimes committed has decreased in the last several years.

7. Many people feel that the use of stem cells in research is unethical. However, they fail to realize that such research could lead to cures for some of the world's most troubling diseases. Diseases like Parkinson's and MS could possibly be cured through the use of stem cells, and those with spinal cord injuries could possibly walk again. Therefore, it is entirely ethical to engage in stem cell research aimed at easing the suffering of those who have life-altering conditions.

The main purpose of the passage is

- A. to discuss why people believe stem cell research is unethical.
- B. to discuss the possible benefits of stem cell research.
- C. to identify diseases that have been cured through stem cell research.
- D. to argue that not conducting stem cell research is unethical.

8. Many people do not know the difference between precision and accuracy. While accuracy means that something is correct, precision simply means that you are able to duplicate results and that they are consistent. For example, if there was a glass of liquid that was 100 degrees, an accurate measurement would be one that was close to this temperature. However, if you measured the temperature five times, and came up with a measurement of exactly 50 degrees each time, your measurement would be extremely precise, but not accurate.

The term accurate results refers to

- A. results that are correct.
- B. results that are consistent.
- C. results that can be duplicated.
- D. results that are measurable.

9. Literacy rates are lower today than they were fifteen years ago. Then, most people learned to read through the use of phonics. Today, whole language programs are favored by many educators.

If these statements are true, it can be concluded that

- A. whole language is more effective at teaching people to read than phonics.
- B. phonics is more effective at teaching people to read than whole language.
- C. literacy rates will probably continue to decline over the next 15 years.
- D. the definition of what it means to be literate is much stricter now.

10. George Washington was a remarkable man. He was born in 1732. Shortly before becoming the President of the United States in 1789, Washington was an important leader in the American Revolutionary War from 1775 to 1783. After retiring, he returned to Mount Vernon in 1799. A short time later, John Adams made him commander in chief of the United States Army. This was done in anticipation that the country might go to war with France.

Almost immediately after serving as a leader in the American Revolutionary War

- A. Washington returned to Mount Vernon.
- B. Washington was made commander in chief of the U.S. Army.
- C. Washington became the President of the United States.
- D. Washington decided to go into retirement.

11. The world would be a much better place if people were more considerate of their fellow man. For example, holding doors open for others in public places is a gesture of kindness that makes almost everyone feel good. Smiling and saying hello to strangers while walking down the street also does a lot to put others at ease. Finally, helping neighbors and friends who are experiencing hard times by bringing them meals or mowing their lawn are small gestures that are always appreciated.

The purpose of the passage is

- A. to inform the reader that most people are inconsiderate.
- B. to state that consideration for others is important.
- C. to tell how neighbors and friends should be treated.
- D. to state some ways that people can show consideration.

12. At one time, most fences were made of wood. Currently, vinyl fences are becoming increasingly common. There are several reasons for this. First, vinyl will not rot like wood will. Second, vinyl will retain its color indefinitely and will never need to be repainted. Last, contrary to what most people believe, vinyl is stronger than wood.

The main idea of the passage is

- A. wood is the most common fence material.
- B. most fences are made of vinyl.
- C. vinyl is better than wood.
- D. most people don't know much about vinyl.

13. Many credit card companies employ sneaky tactics to get more money out of consumers. One tactic is to advertise low introductory rates. A company may tell customers that they won't be charged any interest on their purchases. However, if the customer is late on even one payment, those rates will skyrocket. Another tactic is the practice of putting payments towards lower rate debt. Cash advances are usually subject to much higher rates of interest than purchases. To get more money out of consumers, companies will apply payments to the lower rate debt first. In many cases, the consumer will still be charged the higher rate on the remaining balance.

Low introductory rates can help credit card companies get more money out of consumers because

- A. the rates can increase suddenly.
- B. cash advances are subject to higher interest.
- C. payments go towards lower rate debt.
- D. they encourage consumers to make late payments.

14. An important concept in mathematics is the order of operations. When you are presented with a problem, it's important to know in what order you should make the calculations. Any operations inside the brackets should be done first. Then, any multiplication or division outside of the brackets should be completed. Finally, addition or subtraction should be done last, working from left to right.

After you complete any multiplication, you should

- A. complete the operations inside the brackets.
- B. do any division.
- C. do any addition.
- D. work from right to left.

15. Many people who do well in school are not remarkably intelligent. Instead, they work very hard, learn through memorization, and create a positive impression on teachers by behaving and doing what is expected of them. On the other hand, many geniuses may perform poorly in a traditional academic environment simply because they are bored. They may know the material, but will still get bad marks if they are unwilling to complete assignments, tests, and projects.

The main idea of the passage is

- A. academic environments favor less intelligent students.
- B. academic performance is not always a good measure of intelligence.
- C. most people who do poorly in school are geniuses.
- D. students must do what is expected of them if they hope to do well in school.

Mathematical Knowledge

1. If $16x + 4 = 100$, what is the value of x ?

- A. 6
- B. 7
- C. 8
- D. 9

2. Simplify the following expression:

$$(2x - 20)(5x + 10)$$

- A. $10x^2 - 80x - 200$
- B. $70x - 200$
- C. $10x^2 - 80x + 200$
- D. $10x^2 - 120x - 200$

3. What is the slope of a line with point A (-15, -4) and point B (15, 4)?

- A. $4/15$

- B. $-\frac{4}{15}$
- C. $\frac{15}{4}$
- D. $-\frac{15}{4}$

4. Simplify the following expression:

$$(2x^4)^3 + 2(y^5)^5$$

- A. $8x^{64} + 2y^{3125}$
- B. $6x^7 + 2y^{10}$
- C. $6x^{12} + 2y^{25}$
- D. $8x^{12} + 2y^{25}$

5. If a circle has a diameter of 12cm, what is its area?

- A. 38cm^2
- B. 113cm^2
- C. 276cm^2
- D. 452cm^2

6. The length of a square is 15cm. What is its area?

- A. 30cm^2
- B. 60cm^2
- C. 150cm^2
- D. 225cm^2

7. A rectangle measures 12cm by 3cm by 9cm. What is its volume?

- A. 36cm^3
- B. 108cm^3
- C. 324cm^3
- D. 407cm^3

8. If $2x^2 = -4x^2 + 216$, what is the value of x ?

- A. 4

- B. 5
- C. 6
- D. 7

9. If a rectangle has a length of 5cm and a width of 7cm, what is its area?

- A. 24cm^2
- B. 35cm^2
- C. 42cm^2
- D. 56cm^2

10. On a six-sided die, each side has a number between 1 and 6. What is the probability of throwing a 3 or a 4?

- A. 1 in 6
- B. 1 in 3
- C. 1 in 2
- D. 1 in 4

11. Solve for y in the following inequality:

$$-2y \geq 24 + 6$$

- A. $y \leq 15$
- B. $y \geq 15$
- C. $y \leq -15$
- D. $y \geq -15$

12. If $2x = 5x - 30$, what is the value of x?

- A. 10
- B. -10
- C. 4.3
- D. -4.3

13. What is the value of $6!$?

- A. 36
- B. 120
- C. 720
- D. 5040

14. Solve for x in the following inequality:

$$4x + 23 > -3x - 6$$

- A. $x > -4.14$
- B. $x < -4.14$
- C. $x > 4.14$
- D. $x > 4.14$

15. If $2x + 5x = 3x + x + 30$, what is the value of x ?

- A. 2.72
- B. 4.29
- C. 6
- D. 10

16. $3x^2y + y/2 - 6x$

If $x=4$ and $y=10$, what is the value of the expression

- A. 221
- B. 461
- C. 872
- D. 1916

17. If $w=7$, calculate the value of the following expression:

$$8w^2 - 12w + (4w - 5) + 6$$

- A. 279
- B. 285
- C. 337
- D. 505

18. If $x/3 + 7 = 35$, what is the value of x ?

- A. 9.33
- B. 14
- C. 84
- D. 126

19. In the following equation, solve for x by factoring:

$$2x^2 - 7x = x^2 - 12$$

- A. $x = -3, -4$
- B. $x = 3, 4$
- C. $x = 3, -4$
- D. $x = -3, 4$

20. If x is 25% of 250, what is the value of x ?

- A. 62.5
- B. 100
- C. 1000
- D. 6250

21. If the volume of a cube is 8cm^3 , what is the length of the cube?

- A. 1cm
- B. 2cm
- C. 3cm
- D. 4cm

22. Simply the following expression:

$$(2x^2 + 3)(2x - 1)$$

- A. $4x^3 - 2x^2 + 6x - 3$
- B. $2x^2 + 6x - 3$
- C. $4x^3 - 2x^2 + 6x + 3$

D. $4x^3 - 2x^2 - 6x - 3$

23. Simply the following expression

$(2x^4y^7m^2z) * (5x^2y^3m^8)$

A. $10x^6y^9m^{10}z$

B. $7x^6y^{10}m^{10}z$

C. $10x^5y^{10}m^{10}z$

D. $10x^6y^{10}m^{10}z$

24. A classroom contains 13 boys and 18 girls. If a student's name is chosen randomly, what is the probability it will be a girl's name?

A. 36%

B. 42%

C. 58 %

D. 72%

25. If $x - 9 = 2x + 10$, what is the value of x?

A. -19

B. 19

C. 6.3

D. -6.3

Answer Key

Arithmetic Reasoning

1. B

To find this value, it is simply necessary to divide the total number of flowers (733) by the number of flowers that will be in each bouquet (16):

$733 / 16 = 45.8$

He will be able to make 45 full bouquets. He doesn't have enough to complete the 46th one.

2. B

First, figure out how many dogs each worker can walk: $8 / 2 = 4$ dogs

Then, multiply this number by 3 to find out how many dogs 3 people can walk:

$$4 * 3 = 12$$

3. D

In total, the man is buying 5 steak dinners (one for himself and 4 for his friends).

To find the total amount he will have to spend, multiply the cost of one dinner (\$15.99) by the number of dinners purchased (5): $\$15.99 * 5 = \79.95

4. D

First, calculate the amount of interest that will be earned on the first account:

$$\$329 * 0.04 = \$13.16$$

Then, add this amount to the amount that was already in the account:

$$\$13.16 + \$329 = \$342.16$$

Next, calculate the amount of interest that will be earned on the second account:

$$\$921 * 0.07 = \$64.47$$

Then, add this amount to the amount that was already in the account:

$$\$64.47 + \$921 = \$985.47$$

Finally, add the two totals together: $\$342.16 + \$985.47 = \$1327.63$

5. D

To calculate the maximum amount they can spend, calculate the total amount contributed by the workers: $\$2.58 + \$10.20 + \$19.89 + \$12.89 = \$45.56$

6. A

First, figure out how many bags of potatoes would be sold if six bags of onions were sold. The ratio of onions sold to potatoes sold is 6: 1. So, if he sells 12 bags

of onions, we must divide this number by six to get the number of bags of potatoes sold: $12 / 6 = 2$

Then, use this number to figure out how many bags of carrots he would sell:

The problem tells us that he sells two bags of potatoes for each bag of carrots.

Therefore, he would sell 1 bag of carrots if he sold 12 bags of onions.

7. C

First, calculate how much he had at the end of the first week: $\$150 - \$45 = \$105$

Since he tripled his money, it is then necessary to multiply this value by 3:

$$\$105 * 3 = \$315$$

8. B

To calculate how many miles the woman still has to travel, subtract the distance she has traveled (42 miles) from the distance she originally had to travel (298 miles):

$$298 \text{ miles} - 42 \text{ miles} = 256 \text{ miles}$$

9. B

To find out how many cakes the baker will be able to make, divide the total number of eggs (145) by the number needed to make a single cake (6): $145 / 6 = 24$

10. C

First, calculate the total value of the man's purchases before tax:

$$\$4.50 + \$2.25 + \$1.99 = \$8.74$$

Then, calculate the amount of tax he will have to pay: $\$8.74 * .15 = \1.31

Finally, add these two values to get his total bill: $\$8.74 + \$1.31 = \$10.05$

11. A

First, figure out how much the second person paid: $\$4.50 * 3 = \13.5

Then, calculate the total amount contributed by the first two people:

$$\$4.50 + \$13.50 = \$18.00$$

Finally, calculate how much the third person will have to contribute by subtracting the amount paid (\$18.00) from the original amount owed (\$78.00):

$$\$78.00 - \$18.00 = \$60.00$$

12. D

To calculate this value, multiply the number of pine trees per acre (294) by the number of acres indicated (25): $294 \text{ pine trees/acre} * 25 \text{ acres} = 7350 \text{ pine trees}$

13. C

First, calculate 5% of 2: $2 * 0.05 = 0.1$

Then, add this increase to the amount of time the diver could originally hold his breath:

$$2 + 0.1 = 2.1 \text{ minutes}$$

14. D

To calculate her new weight, add her weight increases (12 pounds and 6 pounds) to her original weight (145 pounds): $145 \text{ pounds} + 12 \text{ pounds} + 6 \text{ pounds} = 163 \text{ pounds}$

15. C

Calculate how much the man lost: $\$40 + \$30 = \$70$

Then, subtract that amount from the amount he had originally: $\$125 - \$70 = \$55$

16. B

First, calculate 13% of 3.7: $3.7 * 0.13 = 0.48 \text{ miles}$

Next, add this to the distance he could already run: $3.7 + 0.48 = 4.18 \text{ miles}$

Finally, subtract this number from his goal: $5 \text{ miles} - 4.18 \text{ miles} = 0.82 \text{ miles}$

17. B

To figure out how much the woman pays in income tax each year, calculate 36% of \$65,000: $\$65,000 * 0.36 = \$23,400$

18. A

To calculate how much the woman has left, subtract the amount she loses (\$260) from the original amount (\$750): $\$750 - \$260 = \$490$

19. C

First, calculate how many students one worker could serve: $24 / 3 = 8$

Then, divide the total number of students (136) by the number of students each worker could serve (8): $136 / 8 = 17$ workers

20. C

First, calculate 10% of 23 pounds: $23 * .10 = 2.3$ pounds

Then, calculate 15% of 23 pounds: $23 * .15 = 3.45$

Then, calculate the total number of pounds the woman gave away: $2.3 + 3.45 = 5.75$

Finally, calculate how many pounds she has left: $23 - 5.75 = 17.25$

21. D

To find the total amount that will be consumed, multiply the number of glasses consumed by one person (8) by the number of people indicated in the question (18):

$$8 * 18 = 144$$

22. C

To calculate this value, divide the total amount of food (65 pounds) by the amount of food each dog requires (5 pounds): $65 / 5 = 13$ dogs

23. C

To calculate how many ornaments each grandchild will receive, divide the total number of ornaments (60) by the number of people they will be divided between (3):

$$60 / 3 = 20$$

24. C

To calculate the number of vans needed, divide the total number of people that have to be transported (250) by the number of people each van can carry (6):

$$250 / 6 = 41.66. \text{ Since it is more than 41, this value must be rounded up to 42.}$$

25. D

First, calculate how many loaves of bread the man sold during the second week:

$$100 * 2 = 200$$

Then, add the number of loaves sold during the first week (100) to the number sold during the second week (200): $100 + 200 = 300$

26. D

First, calculate how many girls there will be after 10 more join the class: $13 + 10 = 23$

Then, express the number of girls compared to boys as a ratio: 23 : 15.

27. B

To calculate this value, subtract the number of ducks that left (75) from the number of ducks that were originally there (350): $350 - 75 = 275$

28. A

To calculate how many bars the child sold, subtract the number he has left (13) from the number he had originally (65): $65 - 13 = 52$

29. D

To calculate the man's total weekly salary, find the total amount he earns at his three jobs:

$$\$500 + \$65 + \$175 = \$740$$

30. C

To calculate this value, multiply the number of liters the plant needs each day (2) by the number of days it must be watered (13): 2 liters/day * 13 days = 26 liters

Word Knowledge

1. A

Spoiled has a number of meanings, and one of them is ruined. If you said somebody spoiled your fun, it would convey the same meaning as saying somebody ruined your fun.

2. B

An oath is a promise. For example, if you make an oath to keep a secret, you are promising to keep that secret.

3. B

When you inquire about something, you are asking about it or requesting more information. For example, if you told somebody you inquired about a job, it would mean you asked about it.

4. C

If you say that you comprehend something, it is the same as saying you understand it. For example, saying you comprehend what another person is saying is the same as saying you understand them.

5. A

To say that something is apparent implies that it is clear or obvious. For example, saying that it is apparent that somebody wants a job is the same as saying it is clear they want the job.

6. C

Silent or silence indicates quiet and calm. To enjoy the silence of the night is to enjoy the complete quiet of the night.

7. A

Absolutely, when used to describe a feeling or state of mind, means completely or totally. For example, saying you are absolutely certain that you made the right decision or saying you are completely certain you made the right decision conveys the same meaning.

8. D

Something that has been modified has been changed. Saying you modified your plans or saying that you changed them conveys the same meaning.

9. A

Something that is delicate can also be described as fragile. Saying that a crystal figurine is delicate or saying it is fragile conveys the same meaning.

10. B

Festivities are often commonly known as celebrations. Attending festivities implies that you are attending a celebration or party.

11. B

To say that someone is exhausted or to say that they are tired conveys a similar meaning. Usually, exhausted is a word used to describe extreme tiredness.

12. B

To cleanse something is to clean or wash it. Saying you cleansed your face or clothes is the same as saying you washed them.

13. A

To battle something is to fight it. To say that two armies battled each other and to say they fought each other conveys the same meaning.

14. C

To wander is to roam. To say someone wandered around a mall is to say they roamed or walked around aimlessly, without a specific goal or destination in mind.

15. D

Something that is done abruptly is done suddenly and without warning. For example, saying the car stopped abruptly and saying it stopped suddenly conveys the same meaning.

16. A

Somebody who has been tricked has been conned. To trick somebody is to con them, which implies that dishonest methods are used to convince another to do something they wouldn't normally do.

17. C

When used as an adjective extremely has the same meaning as very. Saying somebody is extremely happy and saying they are very happy conveys the same meaning.

18. A

To have doubts is to have uncertainties or hesitations. To say that someone is doubtful about something means that they are uncertain.

19. D

To describe something as peculiar is to say it is strange or out of the ordinary. For example, saying you are in a strange situation or saying you are in a peculiar situation conveys the same meaning.

20. B

Describing somebody as courteous implies that they are polite and well-mannered. Polite and courteous both convey the same meaning.

21. C

When somebody says they are troubled by something, it means that they are bothered by it.

22. A

Perspiration is another word for sweat. Saying somebody is perspiring is the same as saying they are sweating.

23. B

Tremble is another word for shake. To say somebody or something trembled means that it shook or shuddered.

24. A

Adhered is often used as another word for stuck. For example, to say a piece of tape adhered to the wall conveys the same meaning as saying the piece of tape stuck to the wall.

25. D

When something is described as tidy, it usually means that it is neat and that things are in their proper place. Saying a house is tidy and saying it is neat conveys the same meaning.

26. C

To sketch something is to draw something. Saying somebody was planning to sketch a landscape and saying they were going to draw a landscape conveys the same meaning.

27. A

To say somebody is frightened is the same as saying they are scared or afraid.

28. B

To sever something is to cut something. For example, to say that somebody severed all ties with somebody else means that they have cut those ties. It can also be used to describe the cutting of objects. For example, saying someone severed a rope with a knife means they cut the rope.

29. A

Describing something as accurate and describing it as correct conveys the same meaning. For example, saying somebody accurately predicted something is the same as saying they correctly predicted something.

30. D

To taunt somebody is to tease them. To say somebody taunted another person conveys the same meaning as saying somebody teased another person. Usually, teasing and taunting is understood to be a mean practice.

31. B

To say something is sincere means that it is genuine or real. For example, saying someone showed sincere concern means that their concern was genuine, and not fake.

32. A

To disclose something is to reveal something. For example, saying somebody disclosed something they had been hiding is the same as saying they revealed it.

33. D

To sprint is to run. Saying that somebody sprinted to their destination and saying they ran to their destination conveys the same meaning.

34. B

To discipline someone for their undesirable actions or behaviors is to punish them. Saying a child was disciplined for his actions and saying he was punished conveys the same meaning.

35. A

To seize something is to take hold of it or grab it. For example, saying the woman seized the man's arm is the same as saying she grabbed it.

Paragraph Comprehension

1. D

The passage states "Women are sold all sorts of creams and ointments, and are promised that these will make them look younger over time. Unfortunately, these claims are entirely false. Lotions can not penetrate to the inner layers of the skin, which is where wrinkles form." Therefore, these goods do not deliver what they promise.

2. B

The topic sentence is placed at the beginning of each supporting paragraph. Supporting evidence is presented after the topic sentence in each supporting paragraph. The passage states "Next come the supporting paragraphs. Each paragraph contains a topic sentence, supporting evidence, and finally a type of mini-conclusion that restates the point of the paragraph."

3. D

The main idea discussed in the passage is that employers benefit the most from establishing a comfortable work space. The author points out that it is not extremely expensive, then identifies all of the benefits for employers: better productivity, less absenteeism, etc.

4. B

It can be concluded that many brides are choosing to wear colors other than white based on two statements in the passage. First, we know that bridesmaids do not wear the same color as the bride. Secondly, it is stated that white is a popular color for bridesmaid dresses. Therefore, since the color of the bridesmaid dress is not the same as the bride's dress, it can be concluded that the bride's dress is not white.

5. B

Many green fuels require more work to produce than conventional fuels. The passage states "producing natural gas is a much more labor-intensive process than producing an equal amount of conventional gasoline. Producing natural gas also involves burning fossil fuels."

6. C

This conclusion can be made based on two statements. First, the passage states that "the majority of crimes discussed on the nightly news featured African American suspects." Second, "it was found that white people were also suspects 50% of the time." Therefore, if half of all suspects are white, but the majority of suspects on the news are African American, it is reasonable to conclude that the news chooses not to report crimes that involve white suspects.

7. B

The main purpose of the passage is to discuss the possible benefits of stem cell research. The author states that many people feel it is unethical, but most of the passage is devoted to discussing the possible benefits of stem cell research. Cures for diseases and being able to repair spinal cord injuries are the possible benefits identified.

8. A

Accuracy is the same as correctness. The passage states “accuracy means that something is correct” and “if there was a glass of liquid that was 100 degrees, an accurate measurement would be one that was close to this temperature.”

9. B

It can be concluded that phonics is a more effective way to learn to read for two reasons. First, the passage states that literacy rates are lower now than they were 15 years ago, meaning that more people knew how to read 15 years ago. Then, the passage states that phonics was the main way people learned how to read then. Therefore, based on these two facts, it can be concluded that phonics is more effective.

10. C

The passage states that “Shortly before becoming the President of the United States in 1789, Washington was an important leader in the American Revolutionary War from 1775 to 1783.”

11. D

The purpose of the passage is to state some specific ways in which people can be more considerate towards others. The author discusses holding doors for others, saying hello to strangers, and bringing meals or doing chores for neighbors and friends who are experiencing difficulties.

12. C

The main idea of the passage is that vinyl is a better building material than wood. The passage states that vinyl will not rot or lose its color, and that it is actually stronger than wood.

13. A

The passage states that “A company may tell customers that they won’t be charged any interest on their purchases. However, if the customer is late on even one payment, those rates will skyrocket.” Therefore, A is the correct choice.

14. C

The passage states “Then, any multiplication or division outside of the brackets should be completed. Finally, addition or subtraction should be done last, working from left to right.” Therefore, C is the correct answer.

15. B

The main idea is that academic performance is not always a true reflection of intelligence. The author discusses two examples of this. First, a less intelligent student may do well in school by working hard and being obedient. On the other hand, a genius could perform poorly by failing to complete the required assignments, even though the genius might know all of the material.

Mathematical Knowledge

1. A

First, subtract 4 from both sides to isolate x:

$$16x + 4 - 4 = 100 - 4$$

$$16x = 96$$

Then, divide both sides by 16 to solve for x:

$$16x/16 = 96/16$$

$$x = 6$$

2. A

Use the FOIL method (first, outside, inside, and last) to get rid of the brackets:

$$10x^2 + 20x - 100x - 200$$

Then, combine like terms to simplify the expression:

$$10x^2 - 80x - 200$$

3. A

To find the slope of a line, it is necessary to calculate the change in y and the change in x:

$$\text{Change in x: } -15 - 15 = -30$$

$$\text{Change in y: } -4 - 4 = -8$$

The slope of a line is expressed as change in y over change in x: $-8/-30$

The two negatives cancel each other out, giving a slope of $8/30$

Finally, the slope can be simplified by dividing the numerator and denominator by 2:

$$4/15$$

4. D

To simplify this expression, the law of exponents that states that $(x^m)^n = x^{m \cdot n}$ must be observed:

$$2^3 x^{4 \cdot 3} + 2 (y^{5 \cdot 5})$$

$$8x^{12} + 2y^{25}$$

5. B

The formula for the area of a circle is πr^2 . The diameter of a circle is equal to twice its radius. Therefore, to find the radius of this circle, it is necessary to divide the diameter by 2: $12 / 2 = 6\text{cm}$

Then, use the formula to find the area of the circle: $\pi 6^2$

$$\pi * 36 = 113\text{cm}^2$$

6. D

The general equation to find the area of a quadrilateral is length * width.

Since the length and width of a square are equal, we can calculate the area of the square described in the question:

$$A = l * w$$

$$A = 15\text{cm} * 15\text{cm}$$

$$A = 225\text{cm}^2$$

7. C

To find the volume of a rectangle, the formula is length * width * height.

Therefore, for this rectangle volume = 12cm * 3cm * 9cm.

The volume of this rectangle is 324cm³

8. C

First, add 4x² to both sides to isolate x:

$$2x^2 + 4x^2 = -4x^2 + 4x^2 + 216$$

$$6x^2 = 216$$

Then, divide both sides by 6:

$$6x^2/6 = 216/6$$

$$x^2 = 36$$

Finally, take the square root of both sides to solve for x:

$$\sqrt{x^2} = \sqrt{36}$$

$$x = 6$$

9. B

The formula for the area of a rectangle is length * width. Using the measurements given in the question, the area of the rectangle can be calculated:

$$A = \text{length} * \text{width}$$

$$A = 5\text{cm} * 7\text{cm}$$

$$A = 35\text{cm}^2$$

10. B

On a six-sided die, the probability of throwing any number is 1 in 6. The probability of throwing a 3 or a 4 is double that, or 2 in 6. This can be simplified by dividing both 2 and 6 by 2.

Therefore, the probability of throwing either a 3 or 4 is 1 in 3.

11. C

First, add the 24 and the 6:

$$-2y \geq 30$$

Then, divide both sides by -2 to solve for y:

$$-2y/-2 \geq 30/-2$$

$$y \geq -15$$

Finally, when both sides are divided by a negative number, the direction of the sign must be reversed:

$$y \leq -15$$

12. A

First, bring the 5x to the left side of the equation to make it easier to solve:

$$2x - 5x = -30$$

$$-3x = -30$$

Then, divide both sides by -3 to solve for x:

$$-3x/-3 = -30/-3$$

$$x = 10$$

13. C

To calculate the value of this permutation, it is necessary to multiply each number between one and 6: $1 * 2 * 3 * 4 * 5 * 6 = 720$

14. A

First, bring the -3x to the left side of the equation and the 23 to the right side of the equation to make it easier to solve:

$$4x + 3x > -6 - 23$$

$$7x > -29$$

Then, divide both side by 7 to solve for x:

$$7x/7 > -29/7$$

$$x > -4.14$$

15. D

First, bring all of the terms containing x to the left side of the equation to make it easier to solve: $2x + 5x - 3x - x = 30$

$$7x - 4x = 30$$

$$3x = 30$$

Then, divide both sides by 3 to solve for x:

$$3x/3 = 30/3$$

$$x=10$$

16. B

First, substitute the given values for x and y into the expression:

$$3(4)^2 + 10 + 10/2 - 6(4)$$

Then, calculate the value of the expression:

According to the order of operations, any multiplying and dividing must be done first:

$$3*16*10 + 5 - 24$$

$$480 + 5 - 24$$

Then, any addition or subtraction should be completed:

$$485 - 24$$

$$461$$

17. C

First, substitute the given value of w (7) into the expression each time it appears.

$$8*7^2 - 12(7) + (4*7 - 5) + 6$$

According to the order of operations, any calculations inside of the brackets must be done first:

$$8 \cdot 7^2 - 12(7) + (23) + 6$$

Finally, calculate the value of the expression:

$$8 \cdot 49 - 84 + 23 + 6$$

$$392 - 84 + 23 + 6$$

$$337$$

18. C

First, subtract 7 from both sides to isolate x:

$$x/3 + 7 - 7 = 35 - 7$$

$$x/3 = 28$$

Then, multiply both sides by three to solve for x:

$$x/3 \cdot 3 = 28 \cdot 3$$

$$x = 84$$

19. B

First, bring all terms to the left side of the equation to make it easier to solve:

$$2x^2 - 7x - x^2 + 12 = 0$$

Combine like terms:

$$x^2 - 7x + 12 = 0$$

Then, factor the equation:

$$(x - 4)(x - 3) = 0$$

Finally, solve for x in both instances:

$$x - 4 = 0$$

$$x = 4$$

$$x - 3 = 0$$

$$x = 3$$

$$x = 3, 4$$

20. C

Another way of expressing the fact that x is 25% of 250 is:

$$0.25x = 250$$

Then, it is simply a matter of dividing both sides by 0.25 to calculate the value of x:

$$0.25x/0.25 = 250/0.25$$

$$x = 1000$$

21. B

The volume of a cube is calculated by cubing the length, width, or height of the cube (the value for all three of these is the same).

Therefore, the volume of a cube equals = length³

In this case $8\text{cm}^3 = x * x * x$, where x can represent the length of the cube.

To find the length, we must figure out which number cubed equals 8.

The answer is 2cm: $2\text{cm} * 2\text{cm} * 2\text{cm} = 8\text{cm}^3$

22. A

Use the FOIL (first, outside, inside, last) to expand the expression:

$$4x^3 - 2x^2 + 6x - 3$$

There are no like terms, so the expression can not be simplified any further.

23. D

To simplify this expression, the law of exponents that states that $x^m * x^n = x^{m+n}$ must be observed.

$$10x^{4+2}y^{7+3}m^{2+8}z$$

Therefore, $10x^6y^{10}m^{10}z$ is the simplified expression.

24. C

First, find the total number of students in the classroom: $13 + 18 = 31$

There is an 18 in 31 chance that a name chosen randomly will be a girl's name.

To express this as a percentage, divide 18 by 31, then multiply that number by 100:

$$18/31 * 100\% = 58\%$$

25. A

First, gather all of the terms that contain an x on the left side of the equation to make it easier to solve:

$$x - 2x - 9 = 10$$

$$-x - 9 = 10$$

Then, add nine to both sides to isolate the x:

$$-x - 9 + 9 = 10 + 9$$

$$-x = 19$$

Finally, divide by -1 to solve for x:

$$-x/-1 = 19/-1$$

$$x = -19$$

Special Report: What Your ASVAB Score Means for You

The ASVAB is not a pass/fail test. You cannot fail the test. It is merely an aptitude test that measures a person's potential in a range of different areas. In order to qualify for enlistment, you need to score at least a 31. The score report that you will receive will show your ranking against other test takers and how well you compare to them.

The scores will be used to determine enlistment incentives (think higher score = more money). It will also be used to determine your career path in the military, if you are planning a military career. The higher your score, the more likely that you will be able to choose the specialty that you are interested in (think job satisfaction).

Depending upon which specialty you are interested in, a score in a particular subtest may be more or less important to your individual circumstance.

Determine in advance what your goal and desired position in the military might be and then determine which individual subtest(s) you need to do well on. Make sure that you are particularly well prepared for those sections and you can help make your future military career dreams come true!

Special Report: Which Additional Sources Are Worth Your Time

We believe the following sources present uncommon value to our customers who wish to “really prepare” for their test. While our manual teaches valuable tricks and tips that no one else covers, these sources are also extremely helpful.

Practice Tests

[ASVAB Practice Test](#)

<http://www.asvabpractice.com>

Study Guide

[ASVAB Study Guide](#)

<http://www.apexprep.com/asvab>

Flashcards

[ASVAB Flashcards](#)

<http://www.flashcardsecrets.com/asvab>

Special Report: ASVAB Secrets in Action
Sample Question from the Word Knowledge Test

Louisa's reverence for her father's intellect was _____ by her impatience with his unworldliness

- A. supported
- B. augmented
- C. encouraged
- D. tempered

Let's look at a couple of different methods of solving this problem.

1. Understand What to Expect

Before you have read any of the answer choices and begin to stumble over some of the complicated vocabulary words used in the answer choices, see if you can predict what the answer might be, based on the information provided to you in the problem sentence. You aren't trying to guess the exact word that might be in the correct answer choice, but only the type of word that you should expect. Is it a positive word, negative word, etc.

Ask yourself what sort of words would likely fill the blank provided. The blank comes directly before a description of her impatience with her father over his unworldliness. Her father's intellect is a positive attribute, the unworldliness is a negative. The missing word is a verb that allows a transition between these two, somehow reconciling the positive and negative aspects of her father's character.

Now that you have an idea of what to expect in a correct answer choice, review the choices provided. "Supported" is positive, not a transition word, making choice A incorrect. "Augmented" deals with increasing or supporting. It doesn't

make sense that a positive attribute of her father's would increase her impatience, making choice B incorrect. The impatience that Louisa feels would not "encourage" her reverence, making choice C incorrect. "Tempered" deals with modifying or adjusting. It does make sense that her perception of a positive attribute of her father's would be modified or adjusted by a negative attribute, making choice D correct.

2. Group the Answers

Review the answer choices and try to identify the common aspects of each answer choice. Are any of the words synonyms or antonyms?

Without ever having looked at the problem, but simply reviewing the answer choices can tell you a lot of information. Classify the words in the answer choice as positive or negative words and group them together. For example, you can tell that answer choice A, B and C deal with a fostering effect, using the words "supported, augmented and encouraged". Meanwhile, choice D is alone in its meaning of having a modifying affect.

Grouping answers makes it easy to accept or reject more than one answer at a time. By reviewing the context of the sentence, "modifying" makes more sense than "fostering" in describing a woman's impatience with her father after describing her reverence, which makes choice D correct.

3. Make it Easier

As you go through and read the sentence and answer choices, don't allow a complicated wording to confuse you. If you know the meaning of a phrase and it is over complicated, be sure to mentally substitute or scratch through and write above the phrase an easier word that means the same thing.

For example, you can rewrite “Louisa’s reverence for her father’s intellect was ----
--- by her impatience with his unworldliness” as “Louisa’s appreciation for her
father was ----- by her impatience with his simplicity.

If reverence and unworldliness are not words you commonly use, then the
sentence may be easier to understand by mentally substituting the words
“appreciation” and “simplicity.”

Using words that are simpler and may make it easier for you to understand the
true context of the sentence will make it easier for you to identify the correct
answer choice. Similarly, you can use synonyms of difficult words as a mental
replacement of the words in the answer choices to make it easier for you to
understand how the word fits into the sentence.

For example, if you know the meaning of the word “augmented” in choice B, but
have difficulty understanding how it fits into the sentence, mentally replace it with
the word “increased.” Increased means the same thing and may be easier for
you to read and understand in the context of the sentence.

Sample Question from the Mathematics Knowledge Test

Three coins are tossed up in the air. What is the probability that two of them will land heads and one will land tails?

- A. 0
- B. $\frac{1}{8}$
- C. $\frac{1}{4}$
- D. $\frac{3}{8}$

Let's look at a few different methods and steps to solving this problem.

1. Reduction and Division

Quickly eliminate the probabilities that you immediately know. You know to roll all heads is a $\frac{1}{8}$ probability, and to roll all tails is a $\frac{1}{8}$ probability. Since there are in total $\frac{8}{8}$ probabilities, you can subtract those two out, leaving you with $\frac{8}{8} - \frac{1}{8} - \frac{1}{8} = \frac{6}{8}$. So after eliminating the possibilities of getting all heads or all tails, you're left with $\frac{6}{8}$ probability. Because there are only three coins, all other combinations are going to involve one of either head or tail, and two of the other. All other combinations will either be 2 heads and 1 tail, or 2 tails and 1 head. Those remaining combinations both have the same chance of occurring, meaning that you can just cut the remaining $\frac{6}{8}$ probability in half, leaving you with a $\frac{3}{8}$ chance that there will be 2 heads and 1 tail, and another $\frac{3}{8}$ chance that there will be 2 tails and 1 head, making choice D correct.

2. Run Through the Possibilities for that Outcome

You know that you have to have two heads and one tail for the three coins. There are only so many combinations, so quickly run through them all.

You could have:

H, H, H

H, H, T

H, T, H

T, H, H

T, T, H

T, H, T

H, T, T

T, T, T

Reviewing these choices, you can see that three of the eight have two heads and one tail, making choice D correct.

3. Fill in the Blanks with Symbology and Odds

Many probability problems can be solved by drawing blanks on a piece of scratch paper (or making mental notes) for each object used in the problem, then filling in probabilities and multiplying them out. In this case, since there are three coins being flipped, draw three blanks. In the first blank, put an “H” and over it write “ $1/2$ ”. This represents the case where the first coin is flipped as heads. In that case (where the first coin comes up heads), one of the other two coins must come up tails and one must come up heads to fulfill the criteria posed in the problem (2 heads and 1 tail). In the second blank, put a “1” or “ $1/1$ ”. This is because it doesn’t matter what is flipped for the second coin, so long as the first coin is heads. In the third blank, put a “ $1/2$ ”. This is because the third coin must be the exact opposite of whatever is in the second blank. Half the time the third coin will be the same as the second coin, and half the time the third coin will be the opposite, hence the “ $1/2$ ”. Now multiply out the odds. There is a half chance that the first coin will come up “heads”, then it doesn’t matter for the second coin, then there is a half chance that the third coin will be the opposite of the second

coin, which will give the desired result of 2 heads and 1 tail. So, that gives $1/2 * 1/1 * 1/2 = 1/4$.

But, now you must calculate the probabilities that result if the first coin is flipped tails. So draw another group of three blanks. In the first blank, put a "T" and over it write "1/2". This represents the case where the first coin is flipped as tails. In that case (where the first coin comes up tails), both of the other two coins must come up heads to fulfill the criteria posed in the problem. In the second blank, put an "H" and over it write "1/2". In the third blank, put an "H" and over it write "1/2". Now multiply out the odds. There is a half chance that the first coin will come up "tails", then there is a half chance that the second coin will be heads, and a half chance that the third coin will be heads. So, that gives $1/2 * 1/2 * 1/2 = 1/8$.

Now, add those two probabilities together. If you flip heads with the first coin, there is a 1/4 chance of ultimately meeting the problem's criteria. If you flip tails with the first coin, there is a 1/8 chance of ultimately meeting the problem's criteria. So, that gives $1/4 + 1/8 = 2/8 + 1/8 = 3/8$, which makes choice D correct.

Sample Question from the Paragraph Comprehension Test

Mark Twain was well aware of his celebrity. He was among the first authors to employ a clipping service to track press coverage of himself, and it was not unusual for him to issue his own press statements if he wanted to influence or "spin" coverage of a particular story. The celebrity Twain achieved during his last ten years still reverberates today. Nearly all of his most popular novels were published before 1890, long before his hair grayed or he began to wear his famous white suit in public. We appreciate the author but seem to remember the celebrity.

Based on the passage above, Mark Twain seemed interested in:

- A. maintaining his celebrity
- B. selling more of his books
- C. hiding his private life
- D. gaining popularity

Let's look at a couple of different methods of solving this problem.

1. Identify the key words in each answer choice. These are the nouns and verbs that are the most important words in the answer choice.

- A. maintaining, celebrity
- B. selling, books
- C. hiding, life
- D. gaining, popularity

Now try to match up each of the key words with the passage and see where they fit. You're trying to find synonyms and/or exact replication between the key words in the answer choices and key words in the passage.

- A. maintaining – no matches; celebrity – matches in sentences 1, 3, and 5
- B. selling – no matches; books – matches with “novels” in sentence 4.
- C. hiding – no matches; life – no matches
- D. gaining – no matches; popularity – matches with “celebrity” in sentences 1, 3, and 5, because they can be synonyms

At this point there are only two choices that have more than one match, choices A and D, and they both have the same number of matches, and with the same word in the passage, which is the word “celebrity” in the passage. This is a good sign, because the test writers will often write two answer choices that are close. Having two answer choices pointing towards the same key word is a strong indicator that those key words hold the “key” to finding the right answer.

Now let’s compare choice A and D and the unmatched key words. Choice A still has “maintaining” which doesn’t have a clear match, while choice D has “gaining” which doesn’t have a clear match. While neither of those have clear matches in the passage, ask yourself what are the best arguments that would support any kind of connection with either of those two words.

“Maintaining” makes sense when you consider that Twain was interested in tracking his press coverage and that he was actively managing the “spin” of certain stories.

“Gaining” makes sense when you consider that Twain was actively issuing his own press releases, however one key point to remember is that he was only issuing these press releases after another story was already in existence.

Since Twain’s press releases were not being released in a news vacuum, but rather as a response mechanism to ensure control over the angle of a story, his

releases were more to *maintain* control over his image, rather than *gain* an image in the first place.

Furthermore, when comparing the terms “popularity” and “celebrity”, there are similarities between the words, but in referring back to the passage, it is clear that “celebrity” has a stronger connection to the passage, being the exact word used three times in the passage.

Since “celebrity” has a stronger match than “popularity” and “maintaining” makes more sense than “gaining,” it is clear that choice A is correct.

2. Use a process of elimination.

A. maintaining his celebrity – The passage discusses how Mark Twain was both aware of his celebrity status and would take steps to ensure that he got the proper coverage in any news story and maintained the image he desired. This is the correct answer.

B. selling more of his books – Mark Twain’s novels are mentioned for their popularity and while common sense would dictate that he would be interested in selling more of his books, the passage makes no mention of him doing anything to promote sales.

C. hiding his private life – While the passage demonstrates that Mark Twain was keenly interested in how the public viewed his life, it does not indicate that he cared about hiding his private life, not even mentioning his life outside of the public eye. The passage deals with how he was seen by the public.

D. gaining popularity – At first, this sounds like a good answer choice, because Mark Twain’s popularity is mentioned several times. The main difference though

is that he wasn't trying to gain popularity, but simply ensuring that the popularity he had was not distorted by bad press.

Sample Question from the Arithmetic Reasoning Test

Table 1

Length of 0.10 mm diameter aluminum wire(m)	Resistance (ohms) at 20° C
1	3.55
2	7.10
4	14.20
10	35.50

Based on the information in Table 1, one would predict that a 20 m length of aluminum wire with a 0.10 mm diameter would have a resistance of:

- A. 16 ohms
- B. 25 ohms
- C. 34 ohms
- D. 71 ohms

Let's look at a few different methods and steps to solving this problem.

1. Create a Proportion or Ratio

The first way you could approach this problem is by setting up a proportion or ratio. You will find that many of the problems on the ASVAB can be solved using this simple technique. Usually whenever you have a given pair of numbers (this number goes with that number) and you are given a third number and asked to

find what number would be its match, then you have a problem that can be converted into an easy proportion or ratio.

In this case you can take any of the pairs of numbers from Table 1. As an example, let's choose the second set of numbers (2 m and 7.10 ohms).

Form a question with the information you have at your disposal: 2 meters goes to 7.10 ohms as 20 meters (from the question) goes to which resistance?

From your ratio: $2\text{m}/7.10\text{ ohms} = 20\text{m}/x$

"x" is used as the missing number that you will solve for.

Cross multiplication provides us with $2*x = 7.10*20$ or $2x = 142$.

Dividing both sides by 2 gives us $2x/2 = 142/2$ or $x = 71$, making choice D correct.

2. Use Algebra

The question is asking for the resistance of a 20 m length of wire. The resistance is a function of the length of the wire, so you know that you could probably set up an algebra problem that would have 20 multiplied by some factor "x" that would give you your answer.

So, now you have $20*x = ?$

But what exactly is "x"? If $20*x$ would give you the resistance of a 20 foot piece of wire, then $1*x$ would give you the resistance of a 1 foot piece of wire.

Remember though, the table already told you the resistance of a 1 foot piece of wire – it's 3.55 ohms.

So, if $1 \cdot x = 3.55$ ohms, then solving for “x” gives you $x = 3.55$ ohms.

Plugging your solution for “x” back into your initial equation of $20 \cdot x = ?$, you now have $20 \cdot 3.55$ ohms = 71 ohms, making choice D correct.

3. Look for a Pattern

Much of the time you can get by with just looking for patterns on problems that provide you with a lot of different numbers. In this case, consider the provided table.

1 – 3.55

2 – 7.10

4 – 14.20

10 – 35.50

What patterns do you see in the above number sequences. It appears that when the number in the first column doubled from 1 to 2, the numbers in the second column doubled as well, going from 3.55 to 7.10. Further inspection shows that when the numbers in the first column doubled from 2 to 4, the numbers in the second column doubled again, going from 7.10 to 14.20. Now you’ve got a pattern, when the first column of numbers doubles, so does the second column.

Since the question asked about a resistance of 20, you should recognize that 20 is the double of 10. Since a length of 10 meant a resistance of 35.50 ohms, then doubling the length of 10 should double the resistance, making 71 ohms, or choice D, correct.

4. Use Logic


A method that works even faster than finding patterns or setting up equations is using simple logic. It appears that as the first number (the length of the wire) gets larger, so does the second number (the resistance).


Since the length of 10 (the largest length wire in the provided table) has a corresponding resistance of 35.50, then another length (such as 20 in the question) should have a length greater than 35.50. As you inspect the answer choices, there is only one answer choice that is greater than 35.50, which is choice D, making it correct.

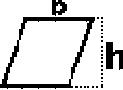
Appendix: Area, Volume, Surface Area Formulas

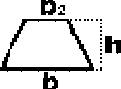
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Areas


square = a^2 

rectangle = ab 

parallelogram = bh 


trapezoid = $\frac{h}{2} (b_1 + b_2)$ 

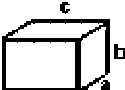
circle = πr^2 


ellipse = $\pi r_1 r_2$ 


triangle = $(1/2) b h$


Volumes


cube = a^3 


rectangular prism = $a b c$ 

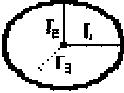
irregular prism = $b h$ 

cylinder = $b h = \pi r^2 h$ 


pyramid = $(1/3) b h$ 

cone = $(1/3) b h = 1/3 \pi r^2 h$ 


sphere = $(4/3) \pi r^3$ 

ellipsoid = $(4/3) \pi r_1 r_2 r_3$ 

Surface Area

cube = $6 a^2$ 

rectangular prism (3 sides of length a,b,c) = $2*a*b + 2*a*c + 2*b*c$

sphere = $4 \pi r^2$ 

Special Report: What Your Test Score Will Tell You About Your IQ

Did you know that most standardized tests correlate very strongly with IQ? In fact, your general intelligence is a better predictor of your success than any other factor, and most tests intentionally measure this trait to some degree to ensure that those selected by the test are truly qualified for the test's purposes.

Before we can delve into the relation between your test score and IQ, I will first have to explain what exactly is IQ. Here's the formula:

Your IQ = 100 + (Number of standard deviations below or above the average)*15

Now, let's define standard deviations by using an example. If we have 5 people with 5 different heights, then first we calculate the average. Let's say the average was 65 inches. The standard deviation is the "average distance" away from the average of each of the members. It is a direct measure of variability - if the 5 people included Jackie Chan and Shaquille O'Neal, obviously there's a lot more variability in that group than a group of 5 sisters who are all within 6 inches in height of each other. The standard deviation uses a number to characterize the average range of difference within a group.

A convenient feature of most groups is that they have a "normal" distribution-makes sense that most things would be normal, right? Without getting into a bunch of statistical mumbo-jumbo, you just need to know that if you know the average of the group and the standard deviation, you can successfully predict someone's percentile rank in the group.

Confused? Let me give you an example. If instead of 5 people's heights, we had 100 people, we could figure out their rank in height JUST by knowing the

average, standard deviation, and their height. We wouldn't need to know each person's height and manually rank them, we could just predict their rank based on three numbers.

What this means is that you can take your PERCENTILE rank that is often given with your test and relate this to your RELATIVE IQ of people taking the test - that is, your IQ relative to the people taking the test. Obviously, there's no way to know your actual IQ because the people taking a standardized test are usually not very good samples of the general population- many of those with extremely low IQ's never achieve a level of success or competency necessary to complete a typical standardized test. In fact, professional psychologists who measure IQ actually have to use non-written tests that can fairly measure the IQ of those not able to complete a traditional test.

The bottom line is to not take your test score too seriously, but it is fun to compute your "relative IQ" among the people who took the test with you. I've done the calculations below. Just look up your percentile rank in the left and then you'll see your "relative IQ" for your test in the right hand column-

Percentile Rank	Your Relative IQ		Percentile Rank	Your Relative IQ
99	135		59	103
98	131		58	103
97	128		57	103
96	126		56	102
95	125		55	102
94	123		54	102
93	122		53	101
92	121		52	101
91	120		51	100
90	119		50	100
89	118		49	100
88	118		48	99
87	117		47	99
86	116		46	98
85	116		45	98
84	115		44	98

83	114		43	97
82	114		42	97
81	113		41	97
80	113		40	96
79	112		39	96
78	112		38	95
77	111		37	95
76	111		36	95
75	110		35	94
74	110		34	94
73	109		33	93
72	109		32	93
71	108		31	93
70	108		30	92
69	107		29	92
68	107		28	91
67	107		27	91
66	106		26	90
65	106		25	90
64	105		24	89
63	105		23	89
62	105		22	88
61	104		21	88
60	104		20	87

Special Report: Retaking the Test: What Are Your Chances at Improving Your Score?

After going through the experience of taking a major test, many test takers feel that once is enough. The test usually comes during a period of transition in the test taker's life, and taking the test is only one of a series of important events. With so many distractions and conflicting recommendations, it may be difficult for a test taker to rationally determine whether or not he should retake the test after viewing his scores.

The importance of the test usually only adds to the burden of the retake decision. However, don't be swayed by emotion. There are a few simple questions that you can ask yourself to guide you as you try to determine whether a retake would improve your score:

1. What went wrong? Why wasn't your score what you expected?

Can you point to a single factor or problem that you feel caused the low score? Were you sick on test day? Was there an emotional upheaval in your life that caused a distraction? Were you late for the test or not able to use the full time allotment? If you can point to any of these specific, individual problems, then a retake should definitely be considered.

2. Is there enough time to improve?

Many problems that may show up in your score report may take a lot of time for improvement. A deficiency in a particular math skill may require weeks or months of tutoring and studying to improve. If you have enough time to improve an identified weakness, then a retake should definitely be considered.

3. How will additional scores be used? Will a score average, highest score, or most recent score be used?

Different test scores may be handled completely differently. If you've taken the test multiple times, sometimes your highest score is used, sometimes your average score is computed and used, and sometimes your most recent score is used. Make sure you understand what method will be used to evaluate your scores, and use that to help you determine whether a retake should be considered.

4. Are my practice test scores significantly higher than my actual test score?

If you have taken a lot of practice tests and are consistently scoring at a much higher level than your actual test score, then you should consider a retake. However, if you've taken five practice tests and only one of your scores was higher than your actual test score, or if your practice test scores were only slightly higher than your actual test score, then it is unlikely that you will significantly increase your score.

5. Do I need perfect scores or will I be able to live with this score? Will this score still allow me to follow my dreams?

What kind of score is acceptable to you? Is your current score "good enough?" Do you have to have a certain score in order to pursue the future of your dreams? If you won't be happy with your current score, and there's no way that you could live with it, then you should consider a retake. However, don't get your hopes up. If you are looking for significant improvement, that may or may not be possible. But if you won't be happy otherwise, it is at least worth the effort.

Remember that there are other considerations. To achieve your dream, it is likely that your grades may also be taken into account. A great test score is usually not the only thing necessary to succeed. Make sure that you aren't overemphasizing the importance of a high test score.

Furthermore, a retake does not always result in a higher score. Some test takers will score lower on a retake, rather than higher. One study shows that one-fourth of test takers will achieve a significant improvement in test score, while one-sixth of test takers will actually show a decrease. While this shows that most test takers will improve, the majority will only improve their scores a little and a retake may not be worth the test taker's effort.

Finally, if a test is taken only once and is considered in the added context of good grades on the part of a test taker, the person reviewing the grades and scores may be tempted to assume that the test taker just had a bad day while taking the test, and may discount the low test score in favor of the high grades. But if the test is retaken and the scores are approximately the same, then the validity of the low scores are only confirmed. Therefore, a retake could actually hurt a test taker by definitely bracketing a test taker's score ability to a limited range.

Special Report: Additional Bonus Material

Due to our efforts to try to keep this book to a manageable length, we've created a link that will give you access to all of your additional bonus material.

Please visit <http://www.asvab-secrets.com/bonuses> to access the information.