

Part 2

Arithmetic Reasoning

Directions

This test has 30 questions about arithmetic. Each question is followed by four possible answers. Decide which answer is correct and then mark the space on your answer sheet that has the same number and letter as your choice. Use your scratch paper for any figuring you wish to do. Try the following sample questions:

- S1. For lunch, Joe bought a cheeseburger for \$1.99, an order of fries for \$1.19, and an iced tea for \$0.85. What is the total cost of Joe's lunch?
- (A) \$4.05
→(B) \$4.03
(C) \$4.00
(D) \$4.25

The total cost is \$4.03, so B is the correct answer.

- S2. An antiques dealer bought some Chippendale chairs for \$9,000. Later, she sold them for \$12,000, making a profit of \$250 per chair. How many chairs did she buy?
- (A) 6
(B) 9
→(C) 12
(D) 36

The number of chairs she bought is 12; therefore, the correct answer is C.

Your score on this test is based on the number of questions you answer correctly. Try to answer every question. Don't spend too much time on any one question.

When you begin, be sure to start with Question 1 in Part 2 of your test booklet and Question 1 in Part 2 of your answer sheet.



IF YOU FINISH BEFORE THE TIME IS UP, YOU MAY
CHECK OVER YOUR WORK ON THIS PART ONLY.

Part 2**Arithmetic Reasoning**

Time: 36 minutes; 30 questions

- If a car is towed 12 miles to the repair shop, and the tow charge is \$3.50 per mile, how much did the tow cost?
(A) \$12.00
(B) \$3.50
 (C) \$42.00
(D) \$100.00
- Apples are on sale for "Buy 2 get 1 free." How many pounds must Janet purchase to get 2 pounds free?
(A) 2 pounds
 (B) 4 pounds
(C) 6 apples
(D) 3 pounds
- A sales manager buys antacid in bottles by the gross. If he goes through 3 bottles of antacid every day, how long will the gross last?
(A) 144 days
(B) 3 days
(C) 20 days
 (D) 48 days
- If 4 pipes of equal length measure 44 feet when they're connected together, how long is each pipe?
 (A) 11 feet
(B) 4 feet
(C) 22 feet
(D) 9 feet
- A waitress earns an average tip of 12% of the cost of the food she serves. If she serves \$375 worth of food in one evening, how much money in tips will she earn on average?
(A) \$37
 (B) \$45
(C) \$42
(D) \$420
- How many square feet of carpeting are needed to carpet a 12-foot by 12-foot room?
(A) 24
(B) 120
(C) 48
 (D) 144
- Carpet stain protector costs \$0.65 per square yard to apply. How much will it cost to apply the protectant to a 16-foot by 18-foot carpet?
(A) \$187.20
(B) \$62.40
 (C) \$20.80
(D) \$96.00
- 150 centimeters is equivalent to:
(A) 1 meter
 (B) 1½ meters
(C) 750 millimeters
(D) 1 yard
- Joe received an hourly wage of \$8.15. His boss gave him a 7% raise. How much does Joe make per hour now?
(A) \$0.57
(B) \$8.90
 (C) \$8.72
(D) \$13.85

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10. A German shepherd and an Alaskan malamute are both headed toward the same fire hydrant. The German shepherd is 120 feet away from the hydrant and the Alaskan malamute is 75 feet away from the hydrant. How much closer to the hydrant is the Alaskan malamute?
- (A) 45 feet
(B) 25 feet
(C) 75 feet
(D) 195 feet
11. A baker made 20 pies. A Boy Scout troop buys $\frac{1}{4}$ of his pies, a preschool teacher buys $\frac{1}{3}$ of his pies, and a caterer buys $\frac{1}{6}$ of his pies. How many pies does the baker have left?
- (A) $\frac{3}{4}$
(B) 15
(C) 12
 (D) 5
12. Miriam bought 5 cases of motor oil on sale. A case of motor oil normally costs \$24.00, but she was able to purchase the oil for \$22.50 a case. How much money did Miriam save on her entire purchase?
- (A) \$7.50
(B) \$1.50
(C) \$8.00
(D) \$22.50
13. A security guard walks the equivalent of 6 city blocks when he makes a circuit around the building. If he walks at a pace of 8 city blocks every 30 minutes, how long will it take him to complete a circuit around the building, assuming he doesn't run into any thieves?
- (A) 20.00 minutes
(B) 3.75 minutes
 (C) 22.50 minutes
(D) 24.00 minutes
14. A recruit reporting to boot camp took a bus from her home to the military processing center in another city. The trip took 14 hours. If she left at 6 a.m., what time did she arrive at the processing center?
- (A) 7 p.m.
(B) 12 a.m.
 (C) 8 p.m.
(D) 9 p.m.
15. Joan is taking an admissions examination. If she has to get at least 40 of the 60 questions right to pass, what percent of the questions does she need to answer correctly?
- (A) 30%
(B) 40%
(C) 66 $\frac{2}{3}$ %
 (D) 66 $\frac{1}{3}$ %
16. A teacher deposited \$3,000 in a retirement fund. If she didn't add any more money to the fund, which earns an annual interest rate of 6%, how much money would she have in 1 year?
- (A) \$180
(B) \$3,006
 (C) \$3,180
(D) \$6,000
17. A farmer sold 3 pints of strawberries for \$1.98 each, 5 pints of raspberries for \$2.49 each, and a bushel of peaches for \$5.50 at his roadside stand. How much money did the farmer make?
- (A) \$9.97
 (B) \$23.89
(C) \$18.39
(D) \$18.97

18. Karl is driving in Austria, where the speed limit is posted in kilometers per hour. The car's speedometer shows that he's traveling at a rate of 75 kilometers per hour. Karl knows that a kilometer is about $\frac{5}{8}$ of a mile. Approximately how many miles per hour is Karl traveling?
- (A) 47
(B) 120
(C) 50
(D) 53
19. A carpenter earns \$12.30 an hour for a 40-hour week. His overtime pay is $1\frac{1}{2}$ times his base pay. If he puts in a 46-hour week, how much is his weekly pay?
- (A) \$602.70
(B) \$492.00
(C) \$565.80
(D) \$110.70
20. In the desert, the temperature reaches an average high of 107 degrees during the day. At night, the low averages 45 degrees. What is the difference between the average high and low temperatures?
- (A) 55 degrees
(B) 57 degrees
(C) 52 degrees
 (D) 62 degrees
21. Stan bought a monster truck for \$2,000 down and payments of \$450 a month for 5 years. What is the total cost of the monster truck?
- (A) \$4,250.
 (B) \$29,000
(C) \$27,000
(D) \$34,400
22. Darla spent \$120.37 on groceries in January, \$108.45 in February, and \$114.86 in March. What was the average monthly cost of Darla's groceries?
- (A) \$343.68
(B) \$110.45
(C) \$114.86
 (D) \$114.56
23. Keith is driving from Reno to Kansas City to meet his girlfriend. The distance between the two cities is 1,650 miles. If Keith can average 50 miles per hour, how many hours will it take him to complete his trip?
- (A) 8 hours
(B) 30 hours
 (C) 33 hours
(D) 82 hours
24. Michael needs 55 gallons of paint to paint an apartment building. He would like to purchase the paint for the least amount of money possible. Which of the following should he buy?
- (A) two 25-gallon buckets at \$550 each
 (B) eleven 5-gallon buckets at \$108 each
(C) six 10-gallon buckets at \$215 each
(D) fifty-five 1-gallon buckets at \$23 each
25. A librarian wants to shelve 532 books. If 4 books fit on a 1-foot length of shelving, how many feet of shelving does she need to shelve all the books?
- (A) 13
(B) 45
(C) 33
 (D) 133
26. A train headed south for Wichita left the station at the same time a train headed north for Des Moines left the same station. The train headed for Wichita traveled at 55 miles per hour. The train headed for Des Moines traveled at 70 miles per hour. How many miles apart were the trains at the end of 3 hours?
- (A) 210 miles
(B) 165 miles
(C) 125 miles
 (D) 375 miles

27. A carpenter needs to cut 4 sections, each 3-feet 8-inches long, from a piece of molding. If the board is only sold by the foot, what is the shortest length of board she can buy?
- (A) 15 feet
 - (B) 14 feet
 - (C) 16 feet
 - (D) 12 feet
28. Kiya had a coupon for 10% off one frozen turkey breast. The turkey breasts cost \$8.50 each, and Kiya bought two. How much did she pay?
- (A) \$16.15
 - (B) \$17.00
 - (C) \$15.30
 - (D) \$7.65
29. A recruiter travels 1,100 miles during a 40-hour workweek. If she spends $\frac{2}{5}$ of her time traveling, how many hours does she spend traveling?
- (A) 22
 - (B) $5\frac{1}{2}$
 - (C) 16
 - (D) 8
30. A man bought a pair of jeans for \$23.00, a shirt for \$14.95, and two ties for \$7.98 each. What was the total cost of his clothing?
- (A) \$53.91
 - (B) \$45.93
 - (C) \$51.99
 - (D) \$54.50



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Chapter 15

Answer Key to Sample Test One

Now that you've taken the first sample test, you need to check your answers to see how well you're doing. If you missed only a few questions, go on to the second sample test to see if your results are consistent from test to test. If you've missed more than a few questions, review the chapters in this book that cover the subtests you didn't do so hot on and brush up on your test-taking skills. If you missed more than 20 percent of the answers on a subtest, you need to spend time reviewing that subject area.

Part 1: General Science Answers

The General Science subtest tests your knowledge of science facts. If you missed a few questions, reread the questions and try to figure out where you went wrong. If you missed more than a few questions, review Chapter 10.

1. A	6. D	11. D	16. C	21. D
2. B	7. B	12. C	17. C	22. C
3. D	8. C	13. D	18. D	23. A
4. C	9. C	14. B	19. D	24. D
5. D	10. A	15. A	20. B	25. A

Part 2: Arithmetic Reasoning Answers

Doing well on the Arithmetic Reasoning subtest is important. It's one of the subtests that make up the Armed Forces Qualifying Test (AFQT), and your score on this determines if you can even enlist in the military. If you've missed more than five or six questions, hit the books and brush up on your math skills. Chapter 6 can get you started.

1. C. Multiply 12 miles times \$3.50 per mile to get \$42.00.
2. B. If Janet must purchase 2 pounds of apples to get 1 free pound, to get 2 free pounds, she would need to purchase twice as many apples, or 4 pounds of apples.
3. D. 144 bottles are in a gross. $144 \div 3$ (bottles per day) = 48 days.
4. A. Divide the total length, 44 feet, by the total number of pipes, 4, because all the pipes are equal in length. The quotient, 11, is the length of each individual pipe. You can check this answer by multiplying: $4 \times 11 = 44$.
5. B. Multiply the total amount spent on drinks, \$375, by 12% to determine the amount of tips. $\$375 \times 0.12 = \45 .
6. D. Square footage is determined by multiplying length times width, or $12 \times 12 = 144$.

7. C. To determine the number of square yards to be protected, multiply 16 feet by 18 feet to determine the number of square feet, 288. Then divide 288 by 9 to convert square feet to square yards (1 square yard = 3 feet \times 3 feet = 9 square feet). Multiply the quotient, 32 square yards, by the cost of protection per square yard, \$0.65, to get the correct answer, \$20.80. Remember to perform all the steps in a calculation.
8. B. 100 centimeters equal 1 meter, so 150 centimeters equal $1\frac{1}{2}$ meters.
9. C. To calculate the new wage, start off by multiplying $\$8.15 \times 0.07 = \0.57 . Then add that number (the amount of Joe's raise) to his original hourly wage. Joe's new hourly wage is $\$8.15 + \$0.57 = \$8.72$.
10. A. Subtract the malamute's distance from the German shepherd's distance ($120 - 75$) to determine how much closer the malamute is to the hydrant.
11. D. Convert the different denominators to a common denominator that all the denominators can divide into evenly. 4, 3, and 6 all divide evenly into 12. To convert $\frac{1}{4}$ to $\frac{3}{12}$, divide 12 (the new common denominator) by 4 (the old common denominator) to get 3. Then multiply $\frac{1}{4}$ by $\frac{3}{3}$ (which is just another way of saying 1). The product is $\frac{3}{12}$. ($\frac{1}{4} = \frac{3}{12}$).
- Do the same calculation for the other fractions: $\frac{1}{3} = \frac{4}{12}$ and $\frac{1}{6} = \frac{2}{12}$. Then add the new numerators together: $3 + 4 + 2 = 9$. This gives you your new added numerator. Place the added numerator over the new denominator, and you can see that $\frac{9}{12}$ of the pies have been sold. $\frac{9}{12}$ can be reduced to $\frac{3}{4}$. $\frac{3}{4}$ or 75% of the pies have been sold. $20 \times 0.75 = 15$. 15 of 20 pies have been sold. $20 - 15 = 5$ pies remaining.
12. A. Subtract the sale price from the regular price: $\$24.00 - \$22.50 = \$1.50$. Multiply the remainder by the number of cases to get your answer: $\$1.50 \times 5 = \7.50 .
13. C. Divide 30 by 8 to determine that the security guard takes 3.75 minutes to walk one city block. Multiply 3.75 times 6, the number of blocks it takes to complete the circuit, to arrive at 22.50, or $22\frac{1}{2}$ minutes.
14. C. Simply add 14 hours to 6 a.m. to reach 8 p.m.
15. D. Divide the number of questions she must get right (40) by the total number of questions (60) to reach $66\frac{2}{3}\%$.
16. C. To determine the amount of interest earned, multiply the principal (\$3,000) by the interest rate (6%) and the number of years interest accrues (1 year): $\$3,000 \times 0.06 \times 1 = \180 . Add the interest earned to the principal to show how much total money the teacher would have: $\$180 + \$3,000 = \$3,180$.
17. B. Multiply three pints of strawberries at \$1.98 ($3 \times \$1.98 = \5.94); 5 pints of raspberries at \$2.49 ($5 \times \$2.49 = \12.45) and 1 bushel of peaches at \$5.50 ($1 \times \$5.50 = \5.50). Add the products together to determine the amount of cash the farmer earned: $\$5.94 + \$12.45 + \$5.50 = \23.89 .
18. A. A kilometer is $\frac{5}{8}$ of a mile, so multiply $75 \times \frac{5}{8}$, or $75\frac{1}{4} \times \frac{5}{8} = 375\frac{3}{8}$. Divide 8 into 375 to reduce the fraction and determine that Karl was traveling at 47 miles per hour.
19. A. $\$12.30 \times 40$ hours = \$492, his base pay per week. $\$12.30 \times 1.5 = \18.45 , his overtime rate per hour. $\$18.45$ (overtime rate per hour) $\times 6$ (hours of overtime) = \$110.70 (overtime pay). $\$492.00$ (base pay) + \$110.70 (overtime pay) = \$602.70 (total pay for the week).
20. D. $107 - 45 = 62$, the difference in degrees.
21. B. 5 years contain 60 months, so multiply \$450 (monthly payment) $\times 60 = \$27,000$ (total payments). Then add \$27,000 (total payments) + \$2,000 (down payment) = \$29,000 (total cost).
22. D. Add the three monthly amounts to determine the total amount Darla spent on groceries: $\$120.37 + \$108.45 + \$114.86 = \343.68 . Divide the total by 3 to determine the average monthly cost: \$114.56.
23. C. 1,650 miles (total distance) $\div 50$ miles per hour (average speed) = 33 hours.

24. **B.** Determine the cost of each option. Choice A doesn't provide enough paint (2×25 gallons = 50 gallons). Choice B: $11 \times \$108 = \$1,188$. Choice C: $6 \times \$215 = \$1,290$. Choice D: $55 \times \$23 = \$1,265$. The lowest price is \$1,188.
25. **D.** Divide 532 by 4 to determine how many feet of shelving will be needed.
26. **D.** The train headed for Wichita traveled 55 miles per hour \times 3 hours = 165 total miles. The train headed for Des Moines traveled 70 miles per hour \times 3 hours = 210 total miles. Adding the distances together gives you the number of miles apart the two trains were after three hours: $210 + 165 = 375$. Another option: You can add the two rates of speed ($55 + 70$) and multiply the sum by 3 hours (125×3 hours = 375).
27. **A.** Convert the mixed number to inches. 3 feet 8 inches equals 44 inches (12 inches per foot \times 3 feet = 36 inches + 8 inches = 44 inches). 44 inches (length each section needs to be) \times 4 (number of sections needed) = 176 inches (total molding needed). To determine the amount of molding needed in feet, convert 176 inches into feet by dividing 176 inches by 12 inches. You get $14\frac{2}{3}$ feet, so the shortest board length is 15 feet.
28. **A.** One turkey breast costs \$8.50 minus 10% of \$8.50, or $\$8.50 - \$0.85 = \$7.65$. The other turkey breast is full price. $\$7.65 + \$8.50 = \$16.15$.
29. **C.** Don't let the number of miles traveled confuse you — you don't use them to solve the problem. $\frac{2}{3}$ of a 40-hour workweek is $\frac{2}{3} \times 40 = \frac{80}{3}$. Reduce the fraction: $80 \div 5 = 16$ hours per week spent traveling.
30. **A.** Simply add the cost of all the items: $\$23.00 + \$14.95 + \$7.98 + \$7.98 = \$53.91$.

Part 3: Word Knowledge Answers

Scoring well on the Word Knowledge subtest is crucial to your enlistment and career plans. The Word Knowledge subtest makes up part of the Armed Forces Qualifying Test (AFQT), and your score on this determines if you can even enlist in the military. If your score is weak in this area, spend time reviewing the material and improving your vocabulary (see Chapter 4).

- | | | | | |
|------|-------|-------|-------|-------|
| 1. B | 8. D | 15. D | 22. C | 29. C |
| 2. A | 9. D | 16. A | 23. A | 30. B |
| 3. D | 10. A | 17. C | 24. D | 31. A |
| 4. B | 11. C | 18. B | 25. D | 32. D |
| 5. D | 12. C | 19. B | 26. D | 33. C |
| 6. C | 13. B | 20. A | 27. A | 34. A |
| 7. B | 14. D | 21. B | 28. C | 35. A |

Part 4: Paragraph Comprehension Answers

The Paragraph Comprehension subtest can be a bit tricky. But you need to get a good score on this subtest to enlist and get the career you want. So pay special attention if you've missed more than a couple of these answers — you need some study time (see Chapter 5). Remember that rereading the paragraph several times to make sure that you have the right answer is perfectly fine.

1. **C.** The passage states that drug use can be helpful, so Choice A is incorrect. The passage defines differences between misuse and abuse, so Choice B is wrong. Although it may be true, the passage doesn't mention Choice D.

Part 2**Arithmetic Reasoning****Directions**

This test has 30 questions about arithmetic. Each question is followed by four possible answers. Decide which answer is correct and then mark the space on your answer sheet that has the same number and letter as your choice. Use your scratch paper for any figuring you wish to do. Try the following sample questions:

S1. If $\frac{1}{3}$ of a 12-foot board is sawed off, how much is left?

- (A) 4 feet
- (B) 3 feet
- (C) 8 feet
- (D) 6 feet

4 feet was the amount sawed off ($\frac{1}{3} \times 12$). $12 - 4 = 8$, so the correct answer is C.

S2. At a cost of \$1.25 per gallon, 15 gallons of gas will cost:

- (A) \$20.00
- (B) \$18.75
- (C) \$12.50
- (D) \$19.25

15 gallons times \$1.25 per gallon equals \$18.75, so the correct answer is B.

Your score on this subtest is based on the number of questions you answer correctly. Try to answer every question. Don't spend too much time on any one question.

When you begin, be sure to start with Question 1 in Part 2 of your test booklet and Question 1 in Part 2 on your answer sheet.



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Part 2**Arithmetic Reasoning**

Time: 36 minutes; 30 questions

1. A student buys a science textbook for \$18.00, a math textbook for \$14.50, and a dictionary for \$9.95. What is the total cost of the books?
(A) \$27.95
✓(B) \$42.45
(C) \$41.95
(D) \$38.50
2. Jack loaned Bob \$1,500 at an annual interest rate of 7%. After one year, how much will Bob owe Jack?
(A) \$105
(B) \$1,500
✓(C) \$1,605
(D) \$1,507
3. A 2-ton truck is taxed at a rate of \$0.12 per pound. How much is the total tax bill?
✓(A) \$480
(B) \$240
(C) \$120
(D) \$600
4. Debra works an 8-hour shift on Friday. How many minutes does she work on Friday?
✓(A) 480 minutes
(B) 800 minutes
(C) 240 minutes
(D) 400 minutes
5. A half-pint of cream is what part of a gallon?
(A) $\frac{1}{8}$
(B) $\frac{1}{4}$
✓(C) $\frac{1}{6}$
(D) $\frac{1}{2}$
6. The cost of a protein bar increased from \$2.50 to \$2.80. The percent increase in the \$2.80 rate was how much?
(A) 16%
(B) 10%
(C) 15%
✓(D) 12%
7. Six people can run 3 machines in the factory. How many machines can 18 people run?
(A) 7
✓(B) 9
(C) 6
(D) 8
8. Last year, Margot grew 50 bushels of corn in her backyard. This year, the yield has increased 8%. How many bushels of corn did Margot grow this year?
(A) 56
(B) 52
(C) 60
✓(D) 54
9. Junior has saved money in his piggybank over the winter. He wants to buy a \$30 computer game. If he has 14 one-dollar bills, 16 half dollars, 12 quarters, 8 dimes, 25 nickels, and 10 pennies, how much more does he need to borrow from Dad to buy the game?
(A) \$27.15
✓(B) \$2.85
(C) \$2.95
(D) \$1.85

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10. On a map drawn to scale, $\frac{1}{2}$ inch equals 1 mile. What length on the map equals 5 miles?
- (A) 2.5 inches
(B) 5.0 inches
(C) 10.0 inches
(D) 1.5 inches
11. How many quart cans can be filled from a 25-gallon bucket of paint?
- (A) 50
(B) 75
 (C) 100
(D) 80
12. If a crew of 4 people can paint the barn in 3 days, how long will it take a crew of 2 people?
- (A) 4 days
(B) $1\frac{1}{2}$ days.
(C) 8 days
 (D) 6 days
13. Candy bars are on sale for 3 for \$0.70. How many dozen candy bars can be bought for \$8.40?
- (A) 3 dozen
(B) 5 dozen
(C) 12 dozen
(D) 2 dozen
14. Margaret is getting married and must be ready by 11:15 a.m. If it's now 8:30 a.m., how much time does she have to get ready?
- (A) $1\frac{1}{2}$ hours
(B) $2\frac{1}{2}$ hours
 (C) $2\frac{3}{4}$ hours
(D) $2\frac{2}{3}$ hours
15. An accounting-firm employee is asked to shred 900 documents. If he can shred documents at a rate of 7 per minute, the number of documents remaining after $1\frac{1}{2}$ hours of shredding is:
- (A) 630
(B) 90
 (C) 270
(D) 810
16. A keg contains 30 gallons of root beer. How many gallons will it contain when it is $\frac{1}{3}$ full?
- (A) 3 gallons
 (B) 10 gallons
(C) 20 gallons
(D) 15 gallons
17. Janet's old pickup truck can only reach a speed of 45 miles per hour. If she drives at top speed, how long will it take her to reach a city 135 miles away?
- (A) 3 hours
(B) 2 hours
(C) 4 hours
(D) $2\frac{1}{2}$ hours
18. A blouse normally costs \$18.50. How much money is saved if the blouse is purchased at a 20% discount?
- (A) \$1.85
(B) \$14.80
(C) \$4.50
 (D) \$3.70
19. A clerk's weekly salary of \$320 is increased to \$360. The percent increase is:
- (A) $10\frac{1}{2}\%$
(B) 11%
 (C) $12\frac{1}{2}\%$
(D) 12%
20. A life insurance company offers a \$10,000 policy at an annual rate of \$32.87 per \$1,000. What is the yearly premium?
- (A) \$320.87
 (B) \$328.70
(C) \$32.87
(D) \$3287.00
21. Dinner at a nice restaurant cost \$35.98. If Joan gave the cashier \$40.00, how much change should she get back?
- (A) \$5.02
 (B) \$4.02
(C) \$3.92
(D) \$1.02



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22. A balloonist circumnavigated the globe in 13 days, 12 hours, 16 minutes, and 13 seconds. A plane circumnavigates the globe in 4 days, 10 hours, 15 minutes, and 7 seconds. How much longer did it take for the balloon to go around the world?
- (A) 12 days, 7 hours, 11 minutes, and 35 seconds
✓(B) 9 days, 2 hours, 1 minute, and 6 seconds
(C) 8 days, 14 hours, 16 minutes, and 6 seconds
(D) 9 days, 7 hours, 3 minutes, and 20 seconds
23. Darlene bought 12 boxes of cookies for \$48.00. What was the cost of each box of cookies?
- ✓(A) \$4.00
(B) \$0.48
(C) \$0.40
(D) \$4.80
24. A tune-up will increase a car's fuel efficiency by 5%. If a car averaged 20 miles per gallon before the tune-up, how many miles per gallon will it average after the tune-up?
- (A) 25
(B) 22
(C) $20\frac{1}{2}$
✓(D) 21
25. An electrician used 27 insulated screws from a box of 3-dozen screws. What part of a dozen was left?
- (A) $\frac{1}{3}$
✓(B) $\frac{3}{4}$
(C) $\frac{1}{2}$
(D) $\frac{5}{8}$
26. A bin of hard candy holds $10\frac{1}{2}$ pounds. How many $\frac{3}{4}$ -pound boxes of candy can be filled from the bin?
- (A) 30 boxes
(B) $15\frac{1}{4}$ boxes
(C) $7\frac{7}{8}$ boxes
✓(D) 14 boxes
27. A patio measures 12 feet by 14 feet. How many 8-inch-square paving stones are needed to pave the patio?
- (A) 21
✓(B) 252
(C) 32
(D) 168
28. A computer programmer is making \$25,000 per year. 28% of her salary is withheld for federal and state deductions. How much is the computer programmer's net pay?
- (A) \$20,000
(B) \$7,000
(C) \$18,750
✓(D) \$18,000
29. The hardware store charges \$115.00 for a 5-gallon bucket of paint. The cost for 10 gallons is:
- (A) $\$115.00 \times \frac{1}{2}$
✓(B) $\$115.00 \times 2$
(C) $\$115.00 \times 10$
(D) $\$115.00 \times \frac{1}{2} + 10$
30. A stack of lumber is 6-feet high. If each piece of lumber is 4-inches thick, how many pieces of lumber are in the stack?
- (A) 72
(B) 12
✓(C) 18
(D) 10



IF YOU FINISH BEFORE THE TIME IS UP, YOU MAY CHECK OVER YOUR WORK ON THIS PART ONLY.

Chapter 17

Answer Key to Sample Test Two

Read over each question from Chapter 16 as you check the answer key. Doing so reminds you what the question is about and serves as a helpful review. If you look at each question and the possible answers, you can also identify some of the traps that you may run across on the ASVAB. By the time you've taken and scored Test Two, you should have a good idea of your strengths and weaknesses. Compare your scores from Test Two to the scores you got on Test One to see if you're making progress. If some subjects or subtests are still giving you problems, you need to keep at the studying thing.

Part 1: General Science Answers

The answers to the questions on the General Science subtest are fairly straightforward — you either know the answer or you don't. If you don't know a lot of answers (more than five or six), settle in for a nice review of Chapter 10. But, if you don't need to do well on this subtest to get the military job of your dreams, consider spending your study time on the math and word sections of the ASVAB — the backbone of the Armed Forces Qualifying Test (AFQT), the test within the test that determines if you can even enter the military.

1. B	6. A	11. A	16. B	21. A
2. C	7. D	12. D	17. A	22. A
3. C	8. C	13. C	18. C	23. C
4. A	9. B	14. A	19. D	24. B
5. D	10. D	15. C	20. A	25. C

Part 2: Arithmetic Reasoning Answers

By now, the Arithmetic Reasoning questions should be easier for you to answer. If they're not, and you're still missing quite a few answers, you need to do some intensive studying. (See Chapter 6.) You have to do well on this portion of the ASVAB if you want to enlist in the military. (This subtest makes up part of the AFQT.)

1. B. Simply add the cost of all the books: $\$18.00 + \$14.50 + \$9.95 = \42.45 .
2. C. First determine the amount of interest owed. Multiply the principal (\$1,500) by the interest rate (7%) by the number of years (1): $\$1,500 \times 0.07 \times 1 = \105 . Then add the interest owed and the principal to determine the total amount owed.
3. A. 2 tons = 4,000 pounds. $4,000 \times \$0.12 = \480.00 .
4. A. 8 hours \times 60 minutes per hour = 480 minutes.
5. C. 8 pints make up a gallon, so a gallon contains 16 half-pints. One half-pint equals $\frac{1}{16}$ of a gallon.

6. **D.** First subtract the old cost from the new cost: $\$2.80 - \$2.50 = \$0.30$. Then divide the difference by the old cost to find the percent difference: $\$0.30 \div \$2.50 = 0.12 = 12\%$.
7. **B.** If 6 people can run 3 machines, then 18 people can run 3 times the number of machines 6 people can run because $18 = 3 \times 6$ (divide 18 by 6). 3×3 machines = 9 machines. 18 people can run 9 machines.
8. **D.** Multiply 50 bushels by 8% to find the yield increase in bushels: $50 \times 0.08 = 4$. Add 4 bushels (the amount of the increase) to 50 bushels (the original yield) to determine that an 8% increase equals 54 bushels.
9. **B.** Convert the change to dollars or fractions of dollars and add:
- | | |
|-------------------|-----------|
| 14 dollars | = \$14.00 |
| 16 half dollars | = \$ 8.00 |
| 12 quarters | = \$ 3.00 |
| 8 dimes | = \$ 0.80 |
| 25 nickels | = \$ 1.25 |
| <u>10 pennies</u> | = \$ 0.10 |
| | \$27.15 |
- Subtract the total from \$30.00 to determine how much money Junior has to borrow:
 $\$30.00 - \$27.15 = \$2.85$.
10. **A.** Multiply the scale measurement for 1 mile ($\frac{1}{2}$ inch per mile) by 5 miles:
 $\frac{1}{2} \times 5$ or $\frac{1}{2} \times \frac{5}{1} = \frac{5}{2}$. Reduce this fraction, and you get 2.5 inches.
11. **C.** A gallon consists of 4 quarts. $4 \times 25 = 100$.
12. **D.** Dividing 4 crewmembers by 2 crewmembers shows that 4 members are twice as many as 2 members. Multiply the number of days it would take 4 people to paint by 2 (3×2) to determine how long it would take 2 people to do the same task.
13. **A.** Multiply $\$0.70 \times 4$ to determine how much one-dozen candy bars cost (\$2.80). Divide \$8.40 (the amount of money that can be spent on candy bars) by \$2.80 to determine how many dozen candy bars can be purchased: $\$8.40 \div \$2.80 = 3$.
14. **C.** The amount of time from 8:30 a.m. to 11:15 a.m. is 2 hours and 45 minutes, or $2\frac{45}{60}$. To reduce the fraction, divide 45 by 60 to get 0.75, or $\frac{3}{4}$. The total amount of time Margaret has to get ready is $2\frac{3}{4}$ hours.
15. **C.** At a rate of 7 documents per minute, the employee can shred 630 documents in 90 minutes. How do you come up with that number? Multiply 7×90 (the number of minutes in $1\frac{1}{2}$ hours). Subtract 630 from 900 total documents to determine that after $1\frac{1}{2}$ hours of shredding, 270 documents remain.
16. **B.** Multiply the number of gallons the keg holds (30) by the fraction remaining in the keg ($\frac{2}{3}$): $30 \times \frac{2}{3} = 20$. Ten gallons remain when the keg is $\frac{2}{3}$ full.
17. **A.** Divide the distance (135 miles) by the speed (45 miles per hour) to determine that Janet will take 3 hours to reach the city.
18. **D.** Multiply the price of the blouse by the amount of the discount: $\$18.50 \times 0.20 = \3.70 .
19. **C.** Subtract the original salary from the new salary to get the difference in salary: $\$360 - \$320 = \$40$. Then divide the difference in salary (\$40) by the original salary (\$320) to determine the percent increase: $40 \div 320 = 0.125 = 12.5\%$.
20. **B.** Divide 10,000 by 1,000 to determine how many thousands of dollars of coverage are offered: $10,000 \div 1,000 = 10$. Multiply that answer (the number of thousand-dollar increments) by \$32.87 (the cost of coverage per thousand-dollar increment) to determine the annual premium: $10 \times \$32.87 = \328.70 .
21. **B.** Subtract \$35.98 from \$40.00 to get \$4.02.

22. B. Subtract the speed of the plane from the speed of the balloon to determine how much longer it took the balloonist:
- $$\begin{array}{r} 13 \text{ days } 12 \text{ hours } 16 \text{ minutes } 13 \text{ seconds} \\ - 4 \text{ days } 10 \text{ hours } 15 \text{ minutes } 7 \text{ seconds} \\ \hline 9 \text{ days } 2 \text{ hours } 1 \text{ minute } 5 \text{ seconds} \end{array}$$
23. A. Divide the total cost by the number of boxes purchased to determine the cost per box: $\$48 \div 12 = \4 .
24. D. Multiply 20×0.05 to determine how many more miles per gallon the car will get. The answer is 1. Then add number of additional miles per gallon the car will get to the original number of miles per gallon the car gets to reach the new average: $1 + 20 = 21$.
25. B. First determine the original number of screws in the box: $3 \text{ dozen} = 3 \times 12 = 36$. Then subtract the number used from the original amount to determine the number of screws left: $36 - 27 = 9$. 9 is $\frac{3}{4}$ of a dozen: 9 of 12 = $\frac{3}{4}$. When you reduce $\frac{3}{4}$, you get $\frac{3}{8}$.
26. D. Divide $10\frac{1}{2}$ by $\frac{3}{4}$. You can perform this operation by multiplying $10\frac{1}{2}$ by the inverse of $\frac{3}{4}$: $10\frac{1}{2} \times \frac{4}{3} = 2\frac{1}{2} \times \frac{4}{3} = 8\frac{2}{3}$. This fraction, reduced, becomes 14.
27. B. First multiply length \times width to determine the area of the patio: $12 \text{ feet} \times 14 \text{ feet} = 168 \text{ square feet}$. Next determine the area in square inches that needs to be covered: $168 \text{ square feet} \times 12 \text{ inches} = 2,016 \text{ square inches}$. Finally, divide that answer by the size of the stones to determine the number of stones needed: $2,016 \div 8 = 252$.
28. D. Calculate the amount of the deduction by multiplying her salary by the percent deducted: $\$25,000 \times 28\% = \$25,000 \times 0.28 = \$7,000$. Subtract that product from the salary to determine the net pay: $\$25,000 - \$7,000 = \$18,000$.
29. B. 10 gallons (the number of gallons you need to know the cost of) is 2×5 (the number of gallons for which you have a price), so the cost of 10 gallons is 2 times the price of 5 gallons, or $\$115 \times 2$.
30. C. Multiply the height of the stack in feet by 12 to determine the height of the stack in inches: $6 \times 12 = 72 \text{ inches}$. Divide that number by 4 inches, the thickness of each board to determine the number of pieces of lumber in the stack: $72 \div 4 = 18$.

Part 3: Word Knowledge Answers

If your score on the Word Knowledge subtest has improved since you took the first test, congratulations. If not, don't be too surprised. Improving your score on this subtest in a short period of time can be difficult. But it can be done. Review the information we provide in Chapter 4 and set aside time each day (maybe several times a day, depending on how soon you plan on taking the ASVAB) to memorize words, roots, prefixes, and suffixes. Your score on the Word Knowledge subtest is important — it counts toward your AFQT score.

- | | | | | |
|------|-------|-------|-------|-------|
| 1. C | 8. B | 15. B | 22. C | 29. A |
| 2. A | 9. C | 16. D | 23. D | 30. A |
| 3. A | 10. C | 17. C | 24. A | 31. B |
| 4. C | 11. A | 18. C | 25. D | 32. D |
| 5. C | 12. B | 19. B | 26. C | 33. A |
| 6. B | 13. A | 20. D | 27. A | 34. B |
| 7. D | 14. C | 21. D | 28. D | 35. A |

Part 2**Arithmetic Reasoning****Directions**

This test has 30 questions about arithmetic. Each question is followed by four possible answers. Decide which answer is correct and then mark the space on your answer sheet that has the same number and letter as your choice. Use your scratch paper for any figuring you wish to do. Try the following sample questions:

S1. An office clerk buys a box of stationery for \$12.50, a dozen pencils for \$1.29, and a mouse pad for \$2.79. What is the total cost of the clerk's purchases?

- (A) \$16.58
(B) \$15.50
(C) \$16.25
(D) \$15.29

The total cost is \$16.58; therefore, A is the correct answer.

S2. A painter working for 9 hours can paint the broad side of a barn. If 3 painters worked at the same rate, how long would it take them to paint the broad side of the barn?

- (A) 6 hours
(B) 2 hours
(C) 5 hours
→ (D) 3 hours

Three painters could complete the work in three hours, so the correct answer is D.

Your score on this test is based on the number of questions you answer correctly. Try to answer every question. Don't spend too much time on any one question.

When you begin, be sure to start with Question 1 in Part 2 of your test booklet and Question 1 in Part 2 on your answer sheet.



IF YOU FINISH BEFORE THE TIME IS UP, YOU MAY
CHECK OVER YOUR WORK ON THIS PART ONLY.

Part 2**Arithmetic Reasoning**

Time: 36 minutes; 30 questions

1. A baker sells a dozen donuts for \$3.99. It costs her \$0.45 to make 3 donuts. How much is the total profit on 5-dozen donuts?
(A) \$17.70
(B) \$13.20
(C) \$2.19
✓(D) \$10.95
2. A designer sells a square yard of carpet for \$15.00. The same carpet can be purchased at the carpet outlet store for \$12.50. What is the percent difference in the higher priced carpet?
(A) The designer's carpet costs about 17% more than the outlet-store carpet.
✓(B) The designer's carpet costs about 20% more than the outlet-store carpet.
(C) The designer's carpet costs about 25% more than the outlet-store carpet.
(D) The designer's carpet costs about 12% more than the outlet-store carpet.
3. A bricklayer charges \$8 per square foot to lay a patio. How much would it cost for the bricklayer to lay a 12-foot-x-16-foot patio?
(A) \$960
(B) \$192
(C) \$224
✓(D) \$1,536
4. Terry got a haircut for \$32.50, a hair color for \$112.20, and a manicure for \$17.25. How much total money did she spend at the salon?
(A) \$167.45
(B) \$144.70
✓(C) \$161.95
(D) \$156.95
5. If 4 people can run 8 machines, how many machines can 2 people run?
(A) 2
✓(B) 4
(C) 1
(D) 3
6. It costs \$0.37 to mail the first ounce of a letter and \$0.29 to mail each additional ounce. How much does it cost to mail a 5-ounce letter?
(A) \$1.85
(B) \$1.16
(C) \$1.45
✓(D) \$1.53
7. A plumber needs three lengths of pipe, each 3-feet, 6-inches long. Pipes are sold by the foot. How many feet does he need to buy?
(A) 15
✓(B) 16
(C) 14
(D) 12
8. An employee contributes $\frac{1}{8}$ of her income to a pension plan. The percent of her salary she contributes to the plan is most nearly:
(A) 10.0%
(B) 12.5%
✓(C) 11.0%
(D) 8.5%
9. A personal trainer earns a 65% commission on her training sales. If she sells \$530.00 worth of training, how much commission does she make?
(A) \$874.50
(B) \$34.45
✓(C) \$344.50
(D) \$185.50

Go on to next page 

10. A customer purchased a kitchen table at a 15% discount. If the discounted price of the table was \$425.00, what was the original price?
- (A) \$488.75
(B) \$361.25
(C) \$515.00
✓(D) \$500.00
11. A treasure map is drawn to a scale of 2 inches = 3 miles. On the map, the distance between Point A and X-marks-the-spot is $9\frac{1}{2}$ inches. How many actual miles does this represent?
- (A) $28\frac{1}{2}$ miles
✓(B) $14\frac{1}{4}$ miles
(C) $6\frac{1}{2}$ miles
(D) 19 miles
12. A painter has painted a picture on a piece of canvas that measures 10x14 inches. In order to accommodate a frame, he has left an unpainted margin of 1 inch all the way around. What part of the canvas has been painted?
- ✓(A) 80%
(B) 75%
(C) 25%
(D) 66%
13. A dog trainer is building a dog run that measures 9 feet by 16 feet. If she wants to fence the perimeter of the run, how many feet of chain link fence will she need?
- (A) 144 feet
(B) 25 feet
(C) 32 feet
✓(D) 50 feet
14. The simple interest on an investment of \$5,000 over 3 years at 7% is:
- (A) \$350
(B) \$1,125
(C) \$700
✓(D) \$1,050
15. Miguel passed 7 of his history-class quizzes and failed 3. The fraction of quizzes he passed is correctly expressed as:
- (A) $\frac{7}{3}$
(B) $\frac{3}{7}$
✓(C) $\frac{7}{10}$
(D) $\frac{3}{5}$
16. A 3-yard-long ribbon was used to trim 4 dresses. Each dress used the same amount of ribbon. How much ribbon was used for each dress?
- (A) 1 yard
(B) $\frac{3}{4}$ yard
(C) $\frac{1}{2}$ yard
✓(D) $\frac{3}{8}$ yard
17. Sarah found a wallet containing \$500 in the street. She returned the wallet to its owner, who gave her a \$30 reward. What percentage of the \$500 was the reward?
- (A) 5%
✓(B) 6%
(C) 7%
(D) 4%
18. A bin of bolts at the hardware store contains 7-dozen bolts when full. The stock clerk is supposed to reorder bolts when the bin is $\frac{1}{6}$ full. How many bolts are in the bin when it's time to reorder?
- ✓(A) 14 bolts
(B) 1 bolt
(C) 84 bolts
(D) 12 bolts
19. A weightlifter bench-pressed 370 pounds on Monday, 410 pounds on Wednesday, and 390 pounds on Friday. What is the average amount of weight the weightlifter lifted that week?
- (A) 380
✓(B) 390
(C) 370
(D) 400
20. A recipe calls for 8 ounces of black beans or red beans. It would be cheapest to buy and use:
- (A) two 4-ounce cans of black beans at \$0.79 each
✓(B) one 8-ounce can of red beans at \$1.49
(C) two 3-ounce cans of black beans at \$0.59 each
(D) three 3-ounce cans of red beans at \$0.65 each

21. A street vendor sells \$25.70 worth of pretzels on Friday, \$32.30 on Saturday, and \$31.80 on Sunday. He spends a fourth of the money over the weekend. How much money does he have left?
- (A) \$89.80
(B) \$22.45
(C) \$44.90
✓(D) \$67.35
22. A recruit has \$30.00. He saw some camouflage socks for \$3.95 a pair. How many pairs of socks can he buy?
- (A) 9
✓(B) 7
(C) 6
(D) 4
23. A crate containing a puppy weighs 60 pounds, 5 ounces. The puppy weighs 43 pounds, 7 ounces. How much does the crate alone weigh?
- (A) 16 pounds, 8 ounces
(B) 16 pounds, 2 ounces
(C) 17 pounds
✓(D) 16 pounds, 14 ounces
24. Teresa bought a personal CD player for \$34.98. She didn't like the sound, so she returned it to the store and bought a better CD player for \$48.99. She gave the clerk a \$20 bill to pay the difference in price. How much change should the clerk give back to her?
- (A) \$14.01
(B) \$4.99
✓(C) \$5.99
(D) \$6.01
25. A house contains one 12-foot-x-14-foot bedroom, one 12-foot-x-10-foot bedroom, and one 8-foot-x-12-foot bedroom. What is the total amount of carpeting needed to carpet all 3 bedrooms?
- (A) 384 square yards
✓(B) 128 square yards
(C) 216 square yards
(D) 88 square yards
26. Rafael can type 9 pages an hour. How long will it take him to type 126 pages?
- ✓(A) 14 hours
(B) 9 hours
(C) 7 hours
(D) 16 hours
27. In a 60-minute gym class, 40 girls want to play volleyball, but only 10 can play at a time. For each player to get the same amount of playing time, how many minutes should each person play?
- (A) 1½ minutes
(B) 6 minutes
(C) 30 minutes
✓(D) 15 minutes
28. The video-rental store charges \$2.00 for the first day a rented video is overdue and \$1.25 for each day after that. If a person paid \$8.25 in late fees, how many days was the video overdue?
- (A) 7 days
✓(B) 6 days
(C) 4 days
(D) 5 days
29. Janet is trying to watch her weight. ½ cup of pudding has 150 calories. The same amount of broccoli has 60 calories. How much broccoli can Janet eat to equal the same number of calories in the ½ cup of pudding?
- (A) 2 cups
(B) 2½ cups
(C) 1½ cups
✓(D) 1¼ cups
30. The neighbor's dog barks at a squirrel every 15 minutes at night. If he first barks at 10 p.m., when you're trying to fall asleep, how many times will he bark by 2 a.m., when you give up trying to sleep and decide to read a book instead?
- (A) 16 times
(B) 132 times
✓(C) 17 times
(D) 15 times



IF YOU FINISH BEFORE THE TIME IS UP, YOU MAY CHECK OVER YOUR WORK ON THIS PART ONLY.

Chapter 19

Answer Key to Sample Test Three

Read over each question from Chapter 18 as you check the answer key. This is your last sample test before taking the real ASVAB. So make sure that you understand what your weaknesses are and continue to review accordingly. You can also go over the test-taking strategies and tips we outline in Chapter 3 and in each of the subtest chapters.

Part 1: General Science Answers

To do well on this subtest on test day, review Chapter 10 and the questions and answers from all the sample tests so that you build your science knowledge and become totally familiar with the types of science questions the ASVAB throws at you.

1. A	6. C	11. C	16. B	21. C
2. D	7. D	12. D	17. D	22. B
3. A	8. A	13. C	18. A	23. C
4. B	9. B	14. D	19. A	24. D
5. B	10. B	15. A	20. C	25. D

Part 2: Arithmetic Reasoning Answers

You have to do well on this subtest in order to qualify for military enlistment — your score from the Arithmetic Reasoning subtest counts toward your AFQT score. If you're still doing poorly on this test, you may want to postpone taking the ASVAB until you have more study time under your belt (and perhaps take another math class or two). Refer to Chapter 6 if you need to brush up on your Arithmetic Reasoning skills.

- D.** Multiply \$0.45 (the cost of making 3 donuts) by 4 to find the cost of making a dozen donuts: $\$0.45 \times 4 = \1.80 . Then multiply the cost of making a dozen donuts by 5 to determine the cost per 5 dozen: $\$1.80 \times 5 = \9.00 . Next, multiply the selling price per dozen times 5, the number of dozens sold: $\$3.95 \times 5 = \19.95 . Finally subtract the cost of making 5-dozen donuts from the price the baker sells them for to determine the profit: $\$19.95 - \$9.00 = \$10.95$.
- B.** Subtract the lower price from the higher price: $\$15.00 - \$12.50 = \$2.50$. Divide the difference by the lower price to determine the percent difference: $\$2.50 \div \$12.50 = 0.20 = 20\%$.
- D.** First determine the square footage of the patio: $12 \text{ feet} \times 16 \text{ feet} = 192 \text{ square feet}$. Then multiply this number by the cost per square foot to determine what the brick layer charges: $192 \times \$8 = \$1,536$.

4. C. Simply add the amounts together: $\$32.50 + \$112.20 + \$17.25 = \161.95 .
5. B. 2 people is $\frac{1}{2}$ as many as 4 people: $2 \div 4 = \frac{1}{2}$. Multiply the number of machines 4 people can run by $\frac{1}{2}$ to determine how many machines 2 people can run: $8 \times \frac{1}{2} = 4$.
6. D. The first ounce costs \$0.37. The next four ounces cost \$0.29 each. Multiply $\$0.29 \times 4$ and then add \$0.37 to the product to determine how much mailing a 5-ounce letter costs: $\$0.29 \times 4 = \1.16 . $\$1.16 + \$0.37 = \$1.53$, the cost of mailing a 5-ounce letter.
7. C. Convert the pipe length to inches: 3 feet, 6 inches = 42 inches. Multiply 42 inches by the number of pipes needed to find the number of inches of pipe needed: $42 \times 4 = 168$. Divide the total amount of pipe needed in inches by 12 to determine how many feet of pipes are needed: $168 \div 12 = 14$.
8. B. Divide 1 by 8 to get $12\frac{1}{2}\%$.
9. C. Multiply her total sales by her percent commission to find her commission: $\$530.00 \times 0.65 = \344.50 .
10. D. \$425.00 is 85% of the original price: $100\% - 15\% = 85\%$. The original price can be determined by dividing \$425.00 by 85%: $\$425.00 \div 0.85 = \500.00 .
11. B. If 2 inches = 3 miles, then 1 inch equals $1\frac{1}{2}$ miles: $3 \div 2 = 1.5$. Multiply $1\frac{1}{2}$ miles $\times 9\frac{1}{2}$ inches to determine the actual distance: $1.5 \times 9.5 = 14.25$, or $14\frac{1}{4}$ miles.
12. A. The area of the entire piece of canvas = 10 inches \times 14 inches = 140 square inches. The portion painted on equals 8 inches \times 12 inches = 112 square inches. (This is determined by subtracting 1 inch from the length of each side to account for the margin.) The portion used for painting can be expressed as a fraction: $\frac{112}{140}$. Reduce this fraction (divide 112 by 140) to determine that 80% of the canvas is covered with paint.
13. D. Calculate perimeter by adding the lengths of all four sides of a quadrilateral: $9 + 9 + 16 + 16 = 50$ feet.
14. D. To figure simple interest, multiply the principal (\$5,000) times the rate (7%) times the number of years the interest will be earned (3): $\$5,000 \times 0.07 \times 3 = \$1,050$.
15. C. The total number of quizzes is 10. If he passed seven of them, the fraction would be expressed as $\frac{7}{10}$.
16. D. Convert the measurement to inches: 1 yard = 36 inches; $36 \text{ inches} \times 3 = 108 \text{ inches}$. Divide the total number of inches by the number of dresses being trimmed to determine the length of each piece of ribbon: $108 \text{ inches} \div 4 = 27 \text{ inches}$. Convert the quotient (27 inches) to a fraction of a yard: $\frac{27}{36} = 27 \div 36 = 75\% = \frac{3}{4}$ of a yard.
17. B. Divide \$30 by \$500 to determine the percentage of \$500 that the reward comprised.
18. A. First find how many bolts a full bin contains: $7 \times 12 = 84$ bolts. Then multiply the total number of bolts in a full bin by $\frac{1}{6}$ to find how many bolts are in the bin when it's $\frac{1}{6}$ full: $84 \times \frac{1}{6} = 14$ bolts.
19. B. Add all the amounts together and divide by 3 to find the average weight lifted: $(370 + 410 + 390) \div 3 = 390$.
20. B. Calculate each answer option and compare:
- Answer A: $2 \times \$0.79 = \1.58 .
- Answer B: \$1.49.
- Answer C: Two 3-ounce cans don't equal 8 ounces, so this answer can't be correct.
- Answer D: $3 \times \$0.65 = \1.95 .

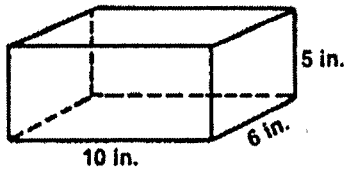
Choice B is the cheapest option.

21. **D.** Add the sales amounts together: $\$25.70 + \$32.30 + \$31.80 = \89.80 . Then multiply the total sales by $\frac{3}{4}$ to determine how much money he has left: $\$89.80 \times 0.75 = \67.35 .
22. **B.** Divide $\$30.00$ by $\$3.95$. The whole number is the number of pairs of socks he could buy: $\$30.00 \div \$3.95 = 7.59$, or 7 pairs of socks.
23. **D.** 16 ounces make up 1 pound. Subtract 43 pounds, 7 ounces (the weight of the puppy) from 59 pounds, 21 ounces (the weight of the crate). 59 pounds, 21 ounces is the same as 60 pounds, 5 ounces, but converting an additional pound to ounces makes the subtraction possible.
- $$\begin{array}{r} 59 \text{ pounds, } 21 \text{ ounces} \\ - 43 \text{ pounds, } 7 \text{ ounces} \\ \hline 16 \text{ pounds, } 14 \text{ ounces} \end{array}$$
24. **C.** Subtract $\$34.98$ from $\$48.99$ to learn the difference in price: $\$48.99 - \$34.98 = \$14.01$. Then subtract $\$14.01$ from the $\$20$ bill to find how much change the customer should receive: $\$20.00 - \$14.01 = \$5.99$.
25. **B.** Find the area of each bedroom and add them together: $12 \times 14 = 168$; $12 \times 10 = 120$; $8 \times 12 = 96$. $168 + 120 + 96 = 384$ square feet. Then, because 3 feet make up a yard, divide the total area in square feet by 3 to determine the number of square yards needed: $384 \div 3 = 128$ square yards.
26. **A.** Divide the total number of pages to be typed by the number of pages Rafael can type per hour to find the number of hours it will take him to type the pages: $126 \text{ pages} \div 9 \text{ pages per hour} = 14 \text{ hours}$.
27. **D.** Divide the group of 40 girls by the number of girls who can play at the same time: $40 \div 10 = 4$. This means 4 groups of girls have to share the 60 minutes, or $60 \text{ minutes} \div 4 = 15 \text{ minutes}$. Thus, each girl plays for 15 minutes.
28. **B.** Subtract the first day's late charge from the total: $\$8.25 - \$2.00 = \$6.25$. Then divide the remainder by $\$1.25$ to determine the number of additional days the video was overdue: $\$6.25 \div \$1.25 = 5$. Add those 5 days to the first day the video was late, to find that the video was 6 days overdue.
29. **D.** Divide the number of calories in the pudding by the number of calories in the broccoli: $150 \div 60 = 2\frac{1}{2}$. Janet can eat $2\frac{1}{2}$ times the amount of broccoli as she can eat pudding for the same number of calories. Multiply $2\frac{1}{2}$ by $\frac{1}{2}$ cup (the amount of pudding that contains 150 calories) to find how many cups of broccoli she can eat for 150 calories: $2.5 \times 0.5 = 1.25$, or $1\frac{1}{4}$ cups.
30. **C.** The time between 10 p.m. and 2 a.m. is 4 hours, or 240 minutes. Divide the total number of minutes in the time period by 15 minutes, the interval in which the dog barks. Then add 1 because the dog started barking at the beginning of the period: $(240 \div 15) + 1 = 17$.

Part 3: Word Knowledge Answers

The Word Knowledge subtest helps determine whether you qualify for enlistment. (The score on this subtest counts toward your AFQT score.) If you're not seeing the improvement in your scores that you need to see, work with a partner who can quiz you on vocabulary. Review your vocabulary words intensely, even several times a day, to ensure your success on this subtest. See Chapter 4 for more help on improving your Word Knowledge.

The volume of a rectangular solid is length \times width \times height. Volume is always expressed in cubic units.

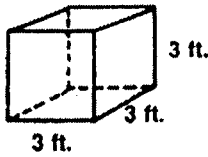


$$V = lwh$$

$$V = (10 \text{ in.})(6 \text{ in.})(5 \text{ in.})$$

$$V = 300 \text{ cu. in.}$$

The volume of a cube is the cube of one side.

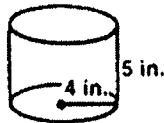


$$V = s^3$$

$$V = (3 \text{ ft.})^3$$

$$V = 27 \text{ cu. ft.}$$

The volume of a cylinder is π times the square of the radius of the base times the height.



$$V = \pi r^2 h$$

$$V = \pi(4 \text{ in.})^2(5 \text{ in.})$$

$$V = \pi(16)(5) = 80\pi \text{ cu. in.}$$

Sample Questions

Here are sample questions dealing with area, perimeter, and volume. Explanatory answers are located at the end of the Arithmetic Reasoning section.

29. A floor that is 9 feet wide and 12 feet long measures how many square feet?

29-A 12

29-B 21

29-C 108

29-D 118

30. The area of a room measuring 12 feet by 15 feet is

30-A 9 square yards.

30-B 12 square yards.

30-C 15 square yards.

30-D 20 square yards.

31. The circumference of a circle that has a radius of 70 feet is most nearly

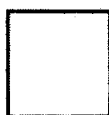
31-A 220 feet.

✓31-B 440 feet.

31-C 660 feet.

31-D 690 feet.

32. Find the perimeter of the following square.



1 in.

32-A 1 inch

32-B 2 inches

32-C 3 inches

✓32-D 4 inches

33. A swimming pool has an average depth of 4 feet and is 25 feet long and 15 feet wide. What is the volume of the pool?

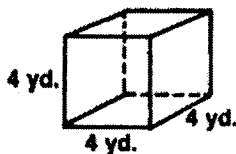
33-A 375 cubic feet

33-B 1,000 cubic feet

✓33-C 1,500 cubic feet

33-D 4,500 cubic feet

34. Find the volume of the following cube.



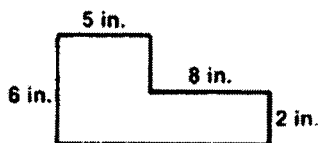
34-A 12 cubic yards

34-B 16 cubic yards

34-C 46 cubic yards

✓34-D 64 cubic yards

35. Find the perimeter of the following figure.



35-A 21 inches

35-B 25 inches

35-C 33 inches

✓35-D 38 inches

Answers and Explanations

- 1-B** The sum of the two numbers is 124.

$$\begin{array}{r} 75 \\ +49 \\ \hline 124 \end{array}$$

- 2-D** Arrange the five amounts in proper vertical columns and add. The sum is \$271.88.

$$\begin{array}{r} \$51.75 \\ 172.50 \\ 39.00 \\ 8.54 \\ + 0.09 \\ \hline \$271.88 \end{array}$$

- 3-B** Arrange numbers in proper vertical columns and then subtract. The difference is 47,949.

$$\begin{array}{r} 57,697 \\ -9,748 \\ \hline 47,949 \end{array}$$

- 4-A** Arrange numbers in proper vertical columns and then subtract. The difference is \$593.47.

$$\begin{array}{r} \$1581.06 \\ -987.59 \\ \hline \$593.47 \end{array}$$

- 5-A** This question consists of an addition and a subtraction. The sum of the first two amounts is \$103.61. \$25.75 from \$103.61 gives us an answer of \$77.86.

$$\begin{array}{r} \$72.07 \\ +31.54 \\ \hline \$103.61 \\ -25.75 \\ \hline \$77.86 \end{array}$$

- 6-C** The product of the two numbers is 288.

$$\begin{array}{r} 36 \\ \times 8 \\ \hline 288 \end{array}$$

- 7-A** Multiply the two numbers and fix the decimal point in the answer to conform with the total number of digits to the right of the decimal points in both the multiplicand and the multiplier. Round off the product to the nearest hundredth.

$$\begin{array}{r} 312.77 \\ \times .04 \\ \hline 12.5108 \end{array}$$

- 8-C** This is simple short division, and the quotient is 91.

$$\begin{array}{r} 5)455 \\ \underline{45} \\ 91 \end{array}$$

- 9-C** Rename the divisor as a whole number and move the decimal point in the dividend the same number of places to the right. Complete the division. The quotient is 53.

$$\begin{array}{r} 0.15 \overline{)7.95} = \\ \underline{15} \overline{)795} \\ \underline{75} \\ 45 \\ \underline{45} \\ 0 \end{array}$$

- 10-B** By computing the value of the coins in each option, we find that choice B has the greatest value.

$$\begin{array}{l} 3 \times 25\text{¢} = 75\text{¢} \\ 8 \times 10\text{¢} = 80\text{¢} \\ 15 \times 5\text{¢} = 75\text{¢} \\ 79 \times 1\text{¢} = 79\text{¢} \end{array}$$

- 11-D** The sum of the two time periods is 5 weeks and 9 days, which is equivalent to 6 weeks and 2 days.

$$\begin{array}{l} 2 \text{ weeks, } 5 \text{ days} \\ +3 \text{ weeks, } 4 \text{ days} \\ \hline 5 \text{ weeks, } 9 \text{ days} \end{array}$$

- 12-B** Two feet, four inches is equal to one foot, 16 inches. This amount less one foot, six inches equals 10 inches.

$$\begin{array}{r} 1'16'' \\ -1'6'' \\ \hline 10'' \end{array}$$

13-A Two thirds of 36 is 24, the number of females. This number subtracted from 36 gives the number of males.

14-C Dividing the distance (200) by the number of hours (4) gives the average speed.

15-C There are 16 ounces in a pound; therefore, 24 ounces would be equivalent to one pound, 8 ounces or $1\frac{1}{2}$ pounds.

16-B 8% of \$12 is 96 cents.

$$\begin{array}{r} \$ 12 \\ \times .08 \\ \hline \$.96 \end{array}$$

17-A The price of a dozen oranges divided by 12 gives the cost per orange. \$.1125 to the nearest cent is 11¢.

$$\begin{array}{r} .1125 \\ 12 \overline{)1.3500} \\ \underline{-12} \\ 15 \\ \underline{-12} \\ 30 \\ \underline{-24} \\ 60 \\ \underline{-60} \\ 0 \end{array}$$

18-A The amount of money spent is .75 times \$75, which equals \$56.25. The fund available minus the amount spent equals the amount left. \$75 minus \$56.25 = \$18.75.

19-C $1\frac{1}{2} \times 6.74 = \10.11

$$\begin{array}{r} \$6.74 \text{ times } 40 \text{ equals } \$269.60 \\ \$10.11 \text{ times } 4 \text{ equals } \underline{+40.44} \\ \$310.04 \end{array}$$

20-D 4 men times 14 days equals 56 man-days

7 men times ? equals 56 man-days

56 divided by 7 = 8.

- 21-A** There are four quarts to a gallon. Therefore, 16 quarts divided by 4 equals 4 gallons.
- 22-B** The correct answer is 2 feet.
- $$15 : 5 :: 6 : x$$
- $$15x = 30$$
- $$x = 2$$
- 23-C** The correct answer is \$2.04.
- $$4 \text{ yards} = 12 \text{ feet}$$
- $$1 : .17 :: 12 : x$$
- $$x = 2.04$$
- 24-B** \$44 minus \$37 equals \$7, the savings on each tire.
- \$7 times 4 equals \$28, the savings on four tires.
- 25-C** The number of persons to be transported divided by the number of persons the bus can carry will give the number of buses needed. 180 divided by 32 equals 5.6.
- 26-D** The number of vehicles greased divided by the number of days gives the daily average $270/31 \approx 8.71$. The correct answer is 9.
- 27-C** If 4 out of 50 sampled articles were defective, the fraction $4/50$ multiplied by 100 equals the percentage of defective articles in the sampling. Because 8% of the articles in the sample were defective, the probable percentage of defective articles in the original shipment would also be 8%.
- 28-A** The total area divided by the number of rooms gives the average area of each room. As there are four rooms, the total area divided by four gives the average area of each room.
- 29-C** $9 \text{ feet} \times 12 \text{ feet} = 108 \text{ square feet}$.
- 30-D** $12 \text{ feet} = 4 \text{ yards}$; $15 \text{ feet} = 5 \text{ yards}$; $4 \times 5 = 20 \text{ square yards}$.
- 31-B** Perimeter or circumference = $2\pi r$; $r = 70 \text{ feet}$; $P = 2 \times \frac{22}{7} \times 70$;
- $$P = 440 \text{ feet.}$$
- 32-D** Each side is 1 inch. Perimeter = $1 + 1 + 1 + 1 = 4 \text{ inches}$.
- 33-C** The volume is obtained by multiplying length times width times depth—25 feet times 15 feet times 4 feet. The answer is 1,500 cubic feet.
- 34-D** The volume of the cube is the cube of one side. $V = (4 \text{ yds.})^3$. $V = 64 \text{ cubic yards}$.
- 35-D** The perimeter = $5 + (6 - 2) + 8 + 2 + 13 + 6 =$
- $$5 + 4 + 8 + 2 + 13 + 6 = 38 \text{ inches.}$$