



# Final Test

Choose the best answer. Write A, B, C, or D.

1. Simplify  $18 + 6 \div 3 + 1$ .  
 A. 19.5      B. 9      C. 6      D. 21      **1.** \_\_\_\_\_
  
2. Translate the phrase *when a number is decreased by 12, the result is 10* into an algebraic expression.  
 A.  $12 - n = 10$       B.  $n - 10 = 12$   
 C.  $n - 12 = 10$       D.  $n \div 12 = 10$       **2.** \_\_\_\_\_
  
3. Simplify  $|-38|$ .  
 A. -38      B. 38      C. 380      D. 83      **3.** \_\_\_\_\_
  
4. Choose the set of numbers that are correctly ordered from least to greatest.  
 A.  $\{1, 2, -3, 4\}$       B.  $\{2, -3, 5, 6\}$   
 C.  $\{-5, -2, 3, 6\}$       D.  $\{-7, -8, -9, -10\}$       **4.** \_\_\_\_\_
  
5. Solve  $7 + (12 + x) = 20$ .  
 A. 25      B. -1      C. 1      D. 15      **5.** \_\_\_\_\_
  
6. Solve  $\frac{x}{-7} \geq 8$ ?  
 A.  $x \geq -56$       B.  $x \geq 56$       C.  $x \leq -56$       D.  $x \leq 56$       **6.** \_\_\_\_\_
  
7. Choose the prime number.  
 A. 17      B. 21      C. 28      D. 34      **7.** \_\_\_\_\_
  
8. Find the product  $(3^4)(3)(3^7)$ .  
 A.  $3^{28}$       B.  $3^{11}$       C.  $3^{29}$       D.  $3^{12}$       **8.** \_\_\_\_\_
  
9. Name the property of addition shown by  $-15 + 11 = 11 + (-15)$ .  
 A. associative      B. identity  
 C. commutative      D. inverse      **9.** \_\_\_\_\_
  
10. Solve  $b + \frac{4}{7} < \frac{9}{7}$ .  
 A.  $b < 7$       B.  $b < -\frac{5}{7}$       C.  $b < -7$       D.  $b < \frac{5}{7}$       **10.** \_\_\_\_\_

**Final Test (continued)**

- 11.** John adds his scores on all his English tests and divides the sum by the number of scores. Which measure of central tendency did he calculate?  
A. median    B. mode    C. mean    D. sum    **11.** \_\_\_\_\_
- 12.** Sheliza sees a diagram that labels the Virgo Supercluster with the caption *50,000,000 light years away*. What is this number in scientific notation?  
A.  $50 \times 10^6$     B.  $50 \times 10^{-7}$     C.  $5.0 \times 10^{10}$     D.  $5 \times 10^7$     **12.** \_\_\_\_\_
- 13.** A certain number is added to 15 and the result multiplied by 3. The final answer is 60. Find the number.  
A. 25    B. 20    C. 15    D. 5    **13.** \_\_\_\_\_
- 14.** Emilio bakes a round cake that has a diameter of 9 inches. He places a decoration around the circumference of the cake. How long is the decoration? Use  $\pi \approx 3.14$ .  
A. 28.26 in.    B. 254.34 in.    C. 63.585 in.    D. 12.14 in.    **14.** \_\_\_\_\_
- 15.** Which ordered pair is a solution of  $5x - 2y = 19$ ?  
A.  $(-3, -2)$     B.  $(-3, 2)$     C.  $(3, 2)$     D.  $(3, -2)$     **15.** \_\_\_\_\_
- 16.** Find the slope of the line that contains  $M(7, 5)$  and  $N(5, 3)$ .  
A. 2    B. -2    C. 0.75    D. 1    **16.** \_\_\_\_\_
- 17.** Choose the pair of ratios that form a proportion.  
A.  $\frac{2}{7}, \frac{6}{20}$     B.  $\frac{3}{6}, \frac{4}{8}$     C.  $\frac{6}{3}, \frac{12}{8}$     D.  $\frac{6}{5}, \frac{5}{4}$     **17.** \_\_\_\_\_
- 18.** Lisa buys a radio marked \$60. She receives a 20% discount. Find the selling price of the radio.  
A. \$46.75    B. \$40    C. \$37.50    D. \$48    **18.** \_\_\_\_\_
- 19.** Peter has 3 pairs of pants and 4 dress shirts. How many different outfits are possible?  
A. 81    B. 12    C. 24    D. 7    **19.** \_\_\_\_\_
- 20.** Find the value of  $C(6, 2)$ .  
A. 36    B. 15    C. 8    D. 12    **20.** \_\_\_\_\_

**Final Test (continued)**

- 21.** Find the number of degrees in a section of a circle graph that is to represent 20%.  
A.  $72^\circ$       B.  $340^\circ$       C.  $85^\circ$       D.  $20^\circ$       **21.** \_\_\_\_\_
- 22.** If angles  $A$  and  $B$  are complementary and  $m \angle A = 23^\circ$ , find  $m \angle B$ .  
A.  $46^\circ$       B.  $157^\circ$       C.  $67^\circ$       D.  $23^\circ$       **22.** \_\_\_\_\_
- 23.** Find the area of a trapezoid with base ( $a$ ) of 10 inches, base ( $b$ ) of 12 inches, and a height of 18 inches.  
A.  $1080 \text{ in}^2$       B.  $198 \text{ in}^2$       C.  $396 \text{ in}^2$       D.  $58 \text{ in}^2$       **23.** \_\_\_\_\_
- 24.** Find the volume of a rectangular prism with length of 12 inches, width of 9 inches, and height of 6 inches.  
A.  $648 \text{ in}^3$       B.  $324 \text{ in}^3$       C.  $468 \text{ in}^3$       D.  $126 \text{ in}^3$       **24.** \_\_\_\_\_
- 25.** Find the best integer estimate for  $\sqrt{1020}$ .  
A. 510      B. 32      C. 100      D. 30      **25.** \_\_\_\_\_
- 26.** Find the length of the hypotenuse of a right triangle if the lengths of the legs are 15 centimeters and 36 centimeters.  
A. 7.14 cm      B. 43 cm      C. 51 cm      D. 39 cm      **26.** \_\_\_\_\_
- 27.** Tina rests a 35-foot ladder against a wall. The top of the ladder hits the wall at a point 32 feet above the ground. How far from the wall is the foot of the ladder? Round the answer to the nearest tenth.  
A. 3.0 ft      B. 4.7 ft      C. 14.2 ft      D. 8.2 ft      **27.** \_\_\_\_\_
- 28.** Choose the expression that is a binomial.  
A.  $\frac{e}{7}$       B.  $5 + 2a - 3a^3$   
C.  $13x^2 + 5xy$       D.  $\frac{6ab}{c} - \frac{3d}{x}$       **28.** \_\_\_\_\_
- 29.** Find the sum  $(-3x^2 - 5x + 6) + (-3x^2 + 5x + 6)$ .  
A.  $-6x^2 - 10x - 12$       B.  $6x^2 - 10x + 12$   
C.  $6x^2 + 12$       D.  $-6x^2 + 12$       **29.** \_\_\_\_\_
- 30.** Find the product  $-3a(16a^3 - 4a^2)$ .  
A.  $-48a^4 + 12a^3$       B.  $-48a^3 + 12a^2$   
C.  $-48a^4 - 12a^3$       D.  $-48a^4 - 4a^3$       **30.** \_\_\_\_\_

**Final Test (continued)**

*Write your answer in the blank at the right of each problem.*

- 31.** What property is shown by the statement  $a \cdot 2 = 2 \cdot a$ ? **31.** \_\_\_\_\_
- 32.** Write a phrase that could be represented by the expression  $5(z + 4)$ . **32.** \_\_\_\_\_
- 33.** Evaluate  $8b - 2a + c$  if  $a = 3$ ,  $b = 12$ , and  $c = 5$ . **33.** \_\_\_\_\_
- 34.** Replace  $\bullet$  with  $<$ ,  $>$ ,  $=$ , or  $\geq$  to make  $-45 \bullet 59$  a true sentence. **34.** \_\_\_\_\_
- 35.** Simplify  $\frac{12 + 24}{-6}$ . **35.** \_\_\_\_\_
- 36.** Find the next number in the pattern 239, 232, 218, 197, . . . . **36.** \_\_\_\_\_
- 37.** Solve  $\frac{a}{-4} = -12$ . **37.** \_\_\_\_\_
- 38.** Brent and Allie spent more than \$185 while shopping. Allie spent \$94. What amount did Brent spend? **38.** \_\_\_\_\_
- 39.** Find the perimeter of a square that measures 12 inches on each side. **39.** \_\_\_\_\_
- 40.** Find the LCM of  $16a^5b^7$  and  $20a^4b^8$ . **40.** \_\_\_\_\_
- 41.** Simplify  $\frac{5^6}{5^9}$ . **41.** \_\_\_\_\_
- 42.** Find  $(-9x^2)(4x)$ . **42.** \_\_\_\_\_
- 43.** Write  $\frac{34}{66}$  in simplest form. **43.** \_\_\_\_\_
- 44.** Estimate  $\$402 + \$103 + \$99 + \$450$ . **44.** \_\_\_\_\_
- 45.** Simplify  $7.5x + 3.7x - 16.5x$ . **45.** \_\_\_\_\_
- 46.** Find the 11th term of the arithmetic sequence 5, 12, 19, 26, . . . . **46.** \_\_\_\_\_
- 47.** Solve  $-\frac{2}{3} \div \left(-\frac{3}{2}\right) = m$ . Write the solution in simplest form. **47.** \_\_\_\_\_

### Final Test (continued)

*Kira earned these test scores in history: 75, 80, 80, 80, 85, 85, 88, 90, 97, and 100.*

48. Find the median of the test scores. 48. \_\_\_\_\_

49. Find the range of the test scores. 49. \_\_\_\_\_

50. Find the mode of the test scores. 50. \_\_\_\_\_

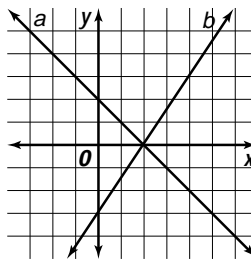
51. Write  $4.86 \times 10^{10}$  in standard notation. 51. \_\_\_\_\_

52. Janice buys \$25 worth of non-taxable items and some other items taxed at 5%. Her total bill is \$41.80. Write an equation to find the cost of the taxable items. 52. \_\_\_\_\_

53. Solve  $3y + (-15) = 8y - 5$ . 53. \_\_\_\_\_

54. Solve  $8x - 2 < 30$ . 54. \_\_\_\_\_

55. What is the equation of line  $b$  in the graph at the right? 55. \_\_\_\_\_



56. Find the solution of the system of equations in the graph at the right. 56. \_\_\_\_\_

57. Find the  $y$ -intercept of the graph of  $y = -3x - 5$ . 57. \_\_\_\_\_

58. Sondra has 10 blue, 6 yellow, 4 purple, and 8 red barrettes in a drawer. If she chooses one without looking, what is the probability she will pick a red barrette? 58. \_\_\_\_\_

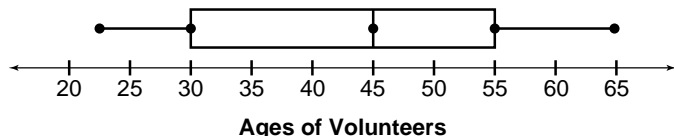
59. A fertilizer is spread at a rate of 30 pounds for 5000 ft<sup>2</sup>. How many pounds are needed for 17,500 ft<sup>2</sup>? 59. \_\_\_\_\_

60. Express  $\frac{1}{4}$  as a percent. 60. \_\_\_\_\_

61. What percent of 30 is 6? 61. \_\_\_\_\_

### Final Test (continued)

62. The box-and-whisker plot shows the ages of volunteers answering phones at a public television fund drive. Half of the volunteers are under what age?



62. \_\_\_\_\_

63. Find the value of  $4!$ .

63. \_\_\_\_\_

64. A die is rolled. What is the probability of rolling a prime number?

64. \_\_\_\_\_

65. In  $\triangle ABC$ , the measure of  $\angle B$  is  $41^\circ$ , and the measure of  $\angle C$  is  $52^\circ$ . Find the measure of  $\angle A$ .

65. \_\_\_\_\_

66. Courtney has a photo of herself and her dog. Her image is 2.5 inches high and the image of the dog is 0.5 inches high. Courtney is 5.5 feet tall. How tall is the dog?

66. \_\_\_\_\_

67. In quadrilateral  $ABCD$ ,  $m\angle A = 155^\circ$ ,  $m\angle B = 56^\circ$ , and  $m\angle C = 58^\circ$ . Find  $m\angle D$ .

67. \_\_\_\_\_

68. Find the area of a parallelogram with a base of 18 centimeters and a height of 12 centimeters.

68. \_\_\_\_\_

69. Find the surface area of a cube with an edge 12 centimeters long.

69. \_\_\_\_\_

70. John shapes wafer cones for ice cream treats. The finished cones are 3 inches in diameter and 6 inches high. Find the volume of the cone. Use  $\pi \approx 3.14$ .

70. \_\_\_\_\_

71. Marcus bikes 9 miles south and then 12 miles east. How many miles is he from where he began? Round the answer to the nearest tenth.

71. \_\_\_\_\_

72. The length of the hypotenuse of a  $30^\circ$ - $60^\circ$  right triangle is 12 centimeters. Find the length of the side opposite the  $30^\circ$  angle.

72. \_\_\_\_\_

73. Find the measure of  $\angle A$  given that  $\tan A = 4.0108$ .

73. \_\_\_\_\_

74. Simplify  $(2^3)^2$ .

74. \_\_\_\_\_

75. Find the product  $(3x - 5)(2x + 5)$ .

75. \_\_\_\_\_