Name _____

Circle the best answer.

1. Simplify.

$$4 + 35 - 27 \cdot 2^3$$

    A. 96   **B.** 177
    C. −27   **D.** −177

2. Which of the following expressions is *not* positive?

    F. $(-2)3(-1)(2)$
    G. $-3(-2)(-3)4$
    H. $5(-2)(-4)10$
    J. $-1(-5)(-2)(-4)$

3. Solve: $-3(k + 5) = 15$

    A. −1
    B. 0
    C. 10
    D. −10

4. Simplify: $-|-16| + |-5|$

    F. −21   **G.** −11
    H. 11   **J.** 21

5. During one day, Ashville had a high temperature of 6°C and a low temperature of −4°C. What is the difference between these temperatures?

    A. −2   **B.** 10
    C. −10   **D.** 2

6. Which is the solution of $25 + 2y = 35$?

    F. $y = 5$
    G. $y = 15$
    H. $y = 40$
    J. $y = 80$

7. Which of the following sets is closed over addition?

    A. $\{1, 2\}$
    B. $\{-1, 1\}$
    C. $\{-1, 0, 1\}$
    D. $\{0\}$

8. Which pair of values will make the equation $x^2 + 2y + 3 = 13$ true?

    F. $x = 2, y = 5$
    G. $x = 2, y = 3$
    H. $x = 3, y = 2$
    J. $x = 4, y = -4$

9. Evaluate: $16 \div 2 + (-3) \cdot 2 - 5$

    A. −3
    B. 1
    C. 5
    D. 13

10. Find the sum.

$$-10 + (-12) - (-14) + |-16|$$

    F. −52   **G.** −28
    H. 8   **J.** 32

11. Solve.

$$\frac{24}{b} + 7 = -5$$

    A. 2   **B.** 12
    C. −12   **D.** −2

12. A bag of potting soil costs $3 less than a flower pot. Ike paid $41 for 3 flower pots and 5 bags of soil. How much does one bag of soil cost?

    F. $3
    G. $4
    H. $5
    J. $7

13. A store rents movies at a cost of $1 plus an additional $1 per day the movie is rented. Joel rents 3 movies for 2 days each and pays with a $20 bill. How much change does he get back?

    A. $3   **B.** $6
    C. $9   **D.** $11

14. Which is the solution of $15 + 2y = 35$?

    F. $y = 10$
    G. $y = 15$
    H. $y = 40$
    J. $y = 80$

15. Find the sum.

$$-4 + 12 - |-3|$$

    A. -19
    B. 5
    C. 11
    D. 19

16. What property is demonstrated below?

$$-7 + 7 = 0$$

    F. Distributive Property
    G. Associative Property
    H. Inverse Property
    J. Identity Property

17. Simplify.

$$-(-8)^2$$

    A. -16 **B.** -64
    C. 16 **D.** 64

18. Solve.

$$-12(n - 15) = 252$$

    F. -36 **G.** -6
    H. 7 **J.** 36

19. Which set is closed under subtraction?

    A. negative numbers
    B. positive numbers
    C. even integers
    D. whole numbers

20. The sum of two consecutive integers is 49. Which equation represents the sum?

    F. $x + (x + 1) = 49$
    G. $x + (x + 2) = 49$
    H. $x(x + 1) = 49$
    J. $x(x + 2) = 49$

21. Which is the value of $d^2 - 7c + cd$ when $c = -2$ and $d = 5$?

    A. -14
    B. 1
    C. 21
    D. 29

22. Which expression has a different value from the other three?

    F. $\dfrac{136}{-17}$ **G.** $\dfrac{136}{17}$
    H. $\dfrac{136}{|-17|}$ **J.** $\dfrac{-136}{-17}$

Tell About It

Explain how to solve the following problem. Show all your work.

23. Casey paid $45 for one new tire and one used tire for his bicycle. The new tire costs $17 more than the used tire. How much did the new tire cost?

_____

Circle the best answer.

1. Simplify.
$-46 - (-8)$

A. -54
B. -38
C. 38
D. 54

7. The following is an example of which property?
$-6(4 - 2) = (-6 \cdot 4) - (-6 \cdot 2)$

A. Associative Property of Multiplication
B. Commutative Property of Addition
C. Distributive Property of Multiplication over Subtraction
D. Identity Property of Multiplication

2. Simplify.
$5 \cdot (3 + 1)^2 + 6 - 2$

F. 44 G. 84
H. 260 J. 404

8. Which set of numbers is closed under multiplication?

F. $\{2, 2\}$ G. $\{3, 6\}$
H. $\{0, 1\}$ J. None of these

3. Multiply.
$-12 \cdot 8$

A. -96
B. -4
C. 4
D. 96

9. Which product has the greatest value?

A. $(-3)(5)(6)$
B. $(3)(-5)(6)$
C. $(3)(5)(-6)$
D. $(-3)(-5)(6)$

4. What is the distance on a number line between 2 and -6?

F. 4 units
G. 6 units
H. 8 units
J. 10 units

10. A crate of oranges costs $4 more than a bag of apples. Ike paid $52 for 3 crates of oranges and 5 bags of apples. How much does one bag of apples cost?

F. $4   G. $5
H. $6   J. $7

5. Find the sum.
$|-24| + (-9) + |11|$

A. -66
B. -22
C. 4
D. 26

11. Represent the situation using an inequality. Three times a number is no less than 45.

A. $3n \geq 45$
B. $3n > 45$
C. $3n < 45$
D. $3n \leq 45$

6. Find the sum.
$4 + 7 + (-4) + 7$

F. 0 G. 7
H. 14 J. 28

12. Solve.
$-8(n + 7) + 14 = 30$

F. -6 G. -9
H. 6 J. 9

13. Which values for p and q make
$p + q = |-17|$ true?

    A. $p = 12, q = 5$
    B. $p = 15, q = 8$
    C. $p = 32, q = 32$
    D. $p = -13, q = -4$

18. Which expression has a different value from
the other three?

    F. $\frac{128}{-29}$ **G.** $\frac{128}{29}$

    H. $\frac{128}{|-29|}$ **J.** $\frac{-128}{-29}$

14. Which is the solution of $-6 + \frac{c}{8} = -12$?

    F. $c = -144$ **G.** $c = -96$
    H. $c = -48$ **J.** $c = -6$

19. The sum of two integers is -7. Their product
is 12. What are the integers?

    A. -9 and 2   **B.** -1 and -6
    C. -3 and -4 **D.** none of these

15. Which is the solution of $b + 5 \geq -13$?

    A. $b \geq -8$ **B.** $b \leq -8$
    C. $b \leq -18$ **D.** $b \geq -18$

20. Which is a solution of $25 < x - 5$?

    F. $x > 30$ **G.** $x < 20$
    H. $x > -30$ **J.** $x > -20$

16. Represent the situation using an inequality.
Four fewer than a number is at most 28.

    F. $n - 4 \leq 28$
    G. $4 - n \leq 28$
    H. $n - 4 < 28$
    J. $4 - n < 28$

21. Which is a solution of $200 < 15x - 5x$?

    A. $x < 10$
    B. $x > 20$
    C. $x > -10$
    D. $x < -20$

17. A rectangle's length is 5 centimeters greater
than its width. The perimeter of the rectangle
is 46 centimeters. Which equation could be
used to find the width?

    A. $4w + 5 = 46$
    B. $4w + 10 = 46$
    C. $2w + 5 = 46$
    D. $2w + 10 = 46$

22. Mr. Flynn had 13 cups of juice. He gave
the same amount of juice to each of his
5 children. Mr. Flynn has less than 3 cups
of juice left. How many cups of juice did
he give to each child?

    F. $n = 2$ **G.** $n > 2\frac{3}{5}$

    H. $n > 2$ **J.** $n < 2\frac{3}{5}$

Tell About It

Explain how you solve each problem. Show all your work.

23. Dr. Root measures the length of a vine over time. Her second
measurement is quadruple the length of the first measurement.
Her third measurement is 25 centimeters longer than the second
measurement. The vine is now more than 73 cm long. Write an
inequality to show how long the vine might have been at the first
measurement.

6A/78

Circle the best answer.

1. Which has the least value?

   A. $|-9| - |4|$ **B.** $|-9 - 4|$

   C. $|4| - |-9|$ **D.** $|4 - (-9)|$

2. Find the distance between the two numbers.
   -7 and 6

   F. 11   **G.** 12
   H. 13   **J.** 14

3. Simplify.
   $-8.12 + 10.24 + 8.12$

   A. 0   **B.** 2.12
   C. 10.24   **D.** 18.36

4. Simplify.
   $3a^2b + 2a - a^2b - 5a$

   F. $2a^2b - 3a$
   G. $4a^2b + 7a$
   H. $2a^2b - 7a$
   J. $4a^2b + 3a$

5. Bhin's age is two years less than three times Tom's age. If Bhin is 16, which equation would you use to find Tom's age?

   A. $16 = 3t - 2$ **B.** $t = 3 \cdot 16 - 2$
   C. $16 - 2 = 3t$ **D.** $16 = (3 - 2)t$

6. Which fraction can be written as a repeating decimal?

   F. $\frac{1}{4}$ **G.** $\frac{7}{15}$

   H. $\frac{9}{20}$ **J.** $-\frac{36}{225}$

7. Which set is closed under the given operation?

   A. integers under division
   B. negative integers under subtraction
   C. odd integers under multiplication
   D. negative integers under multiplication

8. Sharon had $40. She buys 3 t-shirts at the same price. Sharon sells a bracelet for $18. Now she has $22. How much did each t-shirt cost?

   F. $6   **G.** $12
   H. $13.25   **J.** $18

9. Use any method to solve.
   $-5 \cdot (y - 13) = 125$

   A. -38 **B.** -12
   C. 12   **D.** 35

10. Evaluate.
   $m \div 0.8 - (0.2)^2 = 8.96$

   F. $m = 7.2$ **G.** $m = -7.2$
   H. $m = 9.0$ **J.** $m = 7.136$

11. Which algebraic sentence represents the statement, "a number divided by 3 is no more than 4"?

   A. $\frac{n}{3} \geq 4$ **B.** $\frac{n}{3} \leq 4$

   C. $\frac{n}{3} > 4$ **D.** $\frac{n}{3} < 4$

12. The formula for the perimeter of a rectangle is $P = 2(\ell + w)$. If $\ell = 4$ and $P = 14$, what is the value of w?

   F. 3   **G.** 7
   H. 10   **J.** 14

13. Evaluate.

$-5 + 35 \div y = -12$

   A. -7 **B.** 7
   C. -5 **D.** 5

14. Larry puts up 50 meters of fence around his rectangular garden. The width of the garden is 11 meters long. What is the length of Larry's garden?

   F. 11 m   **G.** 14 m
   H. 28 m   **J.** 39 m

15. When $x = -3$ and $y = 2$, what is the value of $x^2 - xy + 7$?

   A. -8 **B.** 4
   C. 10   **D.** 22

16. Suppose p is a positive integer and n is a negative integer. Which of the following results in a positive number?

   F. pn **G.** n^3
   H. $n - p$ **J.** $n \div (-p)$

17. Which is not a rational number?

   A. $0.0\overline{39}$ **B.** $-\frac{737}{945}$

   C. -3.659 **D.** $0.12345\ldots$

18. Estimate by rounding.

$-24.68 - (-32.87)$

   F. -50 **G.** -10
   H. 10   **J.** 50

19. Find the product.

$0.084 \bullet 0.019$

   A. 0.1596   **B.** 0.01596
   C. 0.001596   **D.** 0.0001596

20. Solve.

$6.5(g - 9.3) = -4.55$

   F. $g = -0.7$ **G.** $g = 0.73$
   H. $g = 2.13$ **J.** $g = 8.6$

21. Which is an example of the Identity Property of Addition?

   A. $1 \bullet 6 = 6$
   B. $0 + (-3) = -3$
   C. $12 + (-12) = 0$
   D. $(5 + 1) = (1 + 5)$

22. Simplify.

$3.6 + 7.2 \div 0.4 - (0.6)^2$

   F. 21.24   **G.** 2.124
   H. 212.4   **J.** 0.2124

Tell About It

Explain how you solve each problem. Show all your work.

23. Zelda bought pears that cost $1.72 per pound. If she has $10, what is the greatest number of pounds of pears she can buy, to the nearest quarter pound?

24. Thomas is making bags of trail mix for 7 people. Each bag will have 6.5 ounces of mixed nuts and some raisins. Thomas makes 94.5 ounces of trail mix. How many ounces of raisins does he put in each bag?

Circle the best answer.

1. If $\frac{-3}{5} \cdot a = 1$, what is the value of a?

   A. 1   **B.** $\frac{-3}{5}$

   C. 0   **D.** $\frac{-5}{3}$

2. Which is *not* a rational number?

   F. $0.\overline{25}$ **G.** $\frac{2\pi}{\pi}$

   H. $0.2020020002...$ **J.** $\frac{237}{301}$

3. What is the difference between $-3°F$ and $24°F$?

   A. $-21°F$ **B.** $21°F$

   C. $-27°F$ **D.** $27°F$

4. Which expression is equivalent to the expression below?

$3(a - b^2) + 5ab^2 - a$

   F. $5ab^2 - 3b^2 + 2a$
   G. $5ab^2 - a$
   H. $8ab^2 - a$
   J. $5ab^2 + 3b^2$

5. Divide.

$\frac{3}{8} \div \frac{4}{9}$

   A. $\frac{1}{6}$ **B.** $\frac{27}{32}$

   C. $\frac{7}{17}$ **D.** $\frac{59}{72}$

6. If $-\left(\frac{x}{16}\right) = 4$, what is the value of x?

   F. -64
   G. -4
   H. 4
   J. 64

7. Simplify.

$8.1n + 0.13n^3 - 4(3n + 2.5n)$

   A. $0.13n^3 + 13.9n$ **B.** $0.13n^3 - 13.9n$
   C. $0.13n - 13.9$ **D.** $-13.77n^2$

8. A bicycle rents for $24 plus $1.50 an hour. Kyle and his sister rented bicycles for 3 hours. What was their total cost?

   F. $28.50   **G.** $33
   H. $52.50   **J.** $57

9. Divide.

$0.063 \div 0.7$

   A. 0.009 **B.** 0.9
   C. 0.09 **D.** 9

10. Expand the expression.

$-9(3d - 6e - f)$

   F. $36def$
   G. $-27d - 6e - f$
   H. $-27d - 54e - 9f$
   J. $-27d + 54e + 9f$

11. Choose the opposite.

swim down 5 feet

   A. swim up 5 feet
   B. swim forward 5 feet
   C. swim down 5 feet
   D. swim backwards 5 feet

12. Tom lives 12.7 miles east of the lake. Lisa lives 8.4 miles west of the lake. What is the distance between Tom's house and Lisa's house?

   F. 4.3 miles   **G.** 20.1 miles
   H. 21.1 miles   **J.** 22 miles

13. If $-1\frac{3}{5}x = 4\frac{7}{10}$, what is the value of x?

    A. $-7\frac{13}{25}$ **B.** $-2\frac{15}{16}$

    C. $6\frac{3}{10}$ **D.** $\frac{-16}{47}$

14. Amy has read 57 pages of a book with 215 pages. She can read at most two pages in one minute. How much time will it take her to finish the book?

    F. $m < 316$ **G.** $m \geq 136$

    H. $m \geq 79$ **J.** $m < 60$

15. In Australian football, 18 players from each team play at once. This is 2 fewer than 5 times the number of players from a polo team that play at once. Which equation represents this?

    A. $18 - 2 = 5p$
    B. $18 = 2p - 5$
    C. $5 \cdot 18 = p - 2$
    D. $18 = 5p - 2$

16. Which is an example of the Inverse Property of Addition?

    F. $-5 + 0 = -5$ **G.** $0 = -5 + 5$

    H. $0 - 5 = -5$ **J.** $-5 \cdot \frac{-1}{5} = 1$

17. Simplify.
    $-32\,m + 45\,m + 32\,m$

    A. 13 m   **B.** 32 m

    C. 45 m   **D.** 77 m

18. Simplify.
    $16 + (-2)^3 \cdot 3^0(3) - 6 \div (-1)$

    F. -18 **G.** -2

    H. 30   **D.** 46

19. Every afternoon Marta runs 3.25 miles around the school track and then runs home. In 5 days, she runs a total of 19.5 miles. How far is it from the school track to Marta's house?

    A. 3.25 miles   **B.** 1.75 miles

    C. 0.65 miles   **D.** 0.25 miles

20. Factor the expression.
    $(16k + 24m + 36n)$

    F. $16(k + 24k + 36n)$
    G. $4(4k + 24k + 36n)$
    H. $4(4k + 6k + 9n)$
    J. $16(k + 2k + 3n)$

21. Which set is closed under subtraction?

    A. positive integers
    B. negative integers
    C. $\{-2, 0, 2\}$
    D. even integers

22. Which statement is never true?

    F. $|x| \geq 0$ **G.** $|x| > x$

    H. $|x| = -(x)$ **J.** $|x| < -5$

Tell About It

Explain how you solve each problem. Show all your work.

23. Last week, Frank worked as a waiter for $6\frac{1}{4}$ hours, earning \$9.80 per hour. He also earned \$14.50 per hour delivering packages for $7\frac{1}{2}$ hours. How much money did he earn last week?

24. Akila has 172 stamps in her collection. This is 8 fewer than $\frac{5}{6}$ the number of stamps Garth has. How many stamps does Garth have?