

### Mid-Chapter Quiz: Lessons 1-1 through 1-3

1. Evaluate  $3c - 4(a + b)$  if  $a = -1$ ,  $b = 2$  and  $c = \frac{1}{3}$ .

ANSWER:

-3

2. **TRAVEL** The distance that Maurice traveled in 2.5 hours riding his bicycle can be found by using the formula  $d = rt$ , where  $d$  is the distance traveled,  $r$  is the rate, and  $t$  is the time. How far did Maurice travel if he traveled at a rate of 16 miles per hour?

ANSWER:

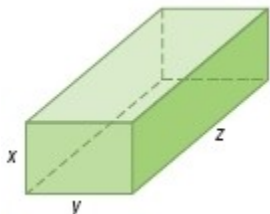
40 m

3. Evaluate  $(5 - m)^3 + n(m - n)$  if  $m = 6$  and  $n = -3$ .

ANSWER:

-28

4. **GEOMETRY** The formula for the surface area of the rectangular prism below is given by the formula  $S = 2xy + 2yz + 2xz$ . What is the surface area of the prism if  $x = 2.2$ ,  $y = 3.5$ , and  $z = 5.1$ ?



ANSWER:

73.54 units<sup>2</sup>

5. **MULTIPLE CHOICE** What is the value of

$$\frac{q^2 + rt}{qr - 2t} \text{ if } q = -4, r = 3, \text{ and } t = 8?$$

A  $-\frac{17}{6}$

B  $-\frac{10}{7}$

C  $-\frac{2}{7}$

D  $-\frac{1}{6}$

ANSWER:

B

Name the sets of numbers to which each number belongs.

6.  $\frac{25}{11}$

ANSWER:

Q, R

7.  $-\frac{128}{32}$

ANSWER:

Z, Q, R

8.  $\sqrt{50}$

ANSWER:

I, R

9. -32.4

ANSWER:

Q, R

10. What is the property illustrated by the equation  $(4 + 15)7 = 4 \cdot 7 + 15 \cdot 7$ ?

ANSWER:

Dist.

11. Simplify  $-3(7a - 4b) + 2(-3a + b)$ .

ANSWER:

$-27a + 14b$

12. **CLOTHES** Brittany is buying T-shirts and jeans for her new job. T-shirts cost \$10.50, and jeans cost \$26.50. She buys 3 T-shirts and 3 pairs of jeans. Illustrate the Distributive Property by writing two expressions representing how much Brittany spent.

ANSWER:

$3(10.50 + 26.50)$  or  $3(10.50) + 3(26.50)$

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13. **MULTIPLE CHOICE** Which expression is equivalent to  $\frac{2}{3}(4m - 5n) + \frac{1}{5}(2m + n)$ ?

F  $\frac{46}{15}m - \frac{47}{15}n$

G  $46m - 47n$

H  $-\frac{mn}{15}$

J  $\frac{5}{4}m - \frac{9}{8}n$

ANSWER:

F

14. Identify the additive inverse and the multiplicative inverse for  $\frac{7}{6}$ .

ANSWER:

additive:  $-\frac{7}{6}$ ; mult.:  $\frac{6}{7}$

15. Write a verbal sentence to represent the equation

$$\frac{a}{a-3} = 1.$$

ANSWER:

The quotient of a number  $a$  and the difference of a number  $a$  and 3 is equal to 1.

16. Solve  $6x + 4y = -1$  for  $x$ .

ANSWER:

$$x = -\frac{2}{3}y - \frac{1}{6}$$

17. **MULTIPLE CHOICE** Which algebraic expression represents the verbal expression, *the product of 4 and the difference of a number and 13*?

A  $4n - 13$

B  $4(n - 13)$

C  $\frac{4}{n-13}$

D  $\frac{4n}{13}$

ANSWER:

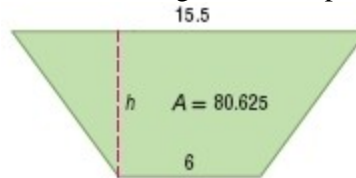
B

18. Solve  $-3(6x + 5) + 2(4x) = 20$ .

ANSWER:

$$-\frac{7}{2}$$

19. What is the height of the trapezoid below?



ANSWER:

7.5 units

20. **GEOMETRY** The formula for the surface area of a sphere is  $SA = 4\pi r^2$ , and the formula for the volume of a sphere is  $V = \frac{4}{3}\pi r^3$ .

a. Find the volume and surface area of a sphere with radius 2 inches. Write your answers in terms of  $\pi$ .

b. Is it possible for a sphere to have the same numerical value for the surface area and volume? If so, find the radius of such a sphere.

ANSWER:

a.  $\frac{32}{3}\pi \text{ in}^3, 16\pi \text{ in}^2$

b. yes; 3 units