

LITERAL EQUATIONS WORKSHEET

Solve for the indicated variable in the parenthesis.

$$1) \quad \frac{P = \cancel{RT}}{IR \quad \cancel{IR}} \quad (T)$$

$$T = \frac{P}{IR}$$

$$2) \quad A = 2(L + W) \quad (W)$$

$$\frac{A}{2} = \cancel{L} + W$$

$$\underline{-L} \quad \cancel{-L}$$

$$W = \frac{A}{2} - L$$

$$3) \quad \frac{y = 5x - 6}{+6 \quad \cancel{1/6}} \quad (x)$$

$$\frac{y + 6}{5} = \frac{5x}{5}$$

$$x = \frac{y + 6}{5}$$

$$4) \quad \frac{2x - 3y = 8}{-2x \quad \cancel{-2x}} \quad (y)$$

$$\frac{-3y}{-3} = \frac{8 - 2x}{-3}$$

$$y = \frac{8 - 2x}{-3}$$

$$5) \quad \frac{x + y = 15}{3 \quad \cancel{3}} \quad (x)$$

$$\frac{x + y}{-y} = \frac{15}{-y}$$

$$x = 15 - y$$

$$6) \quad \frac{y = mx + b}{-mx \quad \cancel{-mx}} \quad (b)$$

$$b = y - mx$$

$$7) \quad ax + by = c \quad (y)$$

$$by = c - ax$$

$$y = \frac{c - ax}{b}$$

$$8) \quad 2 \cdot A = 1/2h(b + c) \cdot 2(b)$$

$$2A = h(b + c)$$

$$\frac{2A}{h} = b + c$$

$$b = \frac{2A}{h} - c$$

$$9) \quad \frac{V = LWH}{WH} \quad (L)$$

$$L = \frac{V}{WH}$$

$$10) \quad A = 4\pi r^2 \quad (r^2)$$

$$r^2 = \frac{A}{4\pi}$$

$$11) \quad V = \pi r^2 h \quad (h)$$

$$h = \frac{V}{\pi r^2}$$

$$12) \quad 7x - y = 14 \quad (x)$$

$$7x = 14 + y$$

$$x = \frac{14 + y}{7}$$

$$13) \quad A = \frac{x + y}{2} \quad (y)$$

$$2A = x + y$$

$$y = 2A - x$$

$$14) \quad R = \frac{E}{I} \quad (I)$$

$$IR = E$$

$$I = \frac{E}{R}$$

$$15) \quad x = \frac{yz}{6} \quad (z)$$

$$6x = yz$$

$$z = \frac{6x}{y}$$

$$16) \quad A = \frac{r}{2L} \quad (L)$$

$$2LA = r$$

$$L = \frac{r}{2A}$$

$$17) \quad A = \frac{a + b + c}{3} \quad (b)$$

$$3A = a + b + c$$

$$3A - a - c = b$$

$$18) \quad 12x - 4y = 20 \quad (y)$$

$$-4y = 20 - 12x$$

$$y = \frac{20 - 12x}{-4} = -5 + 3x$$

$$19) \quad x = \frac{2y - z}{4} \quad (z)$$

$$4x = 2y - z$$

$$4x - 2y = -z$$

$$z = -4x + 2y$$

$$20) \quad P = \frac{R - C}{N} \quad (R)$$

$$NP = R - C$$

$$R = NP + C$$

2-8 Skills Practice

Literal Equations and Dimensional Analysis

Solve each equation or formula for the variable indicated.

1. $7t = x$, for t

$$t = \frac{x}{7}$$

3. $q - r = r$, for r

$$q = 2r$$

$$r = \frac{q}{2}$$

5. $7a - b = 15a$, for a

$$-b = 8a$$

$$a = -b/8$$

7. $x - 2y = 1$, for y

$$-2y = 1 - x$$

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

9. $7f + g = 5$, for f

$$7f = 5 - g$$

$$f = (5 - g)/7$$

11. $rt - 2n = y$, for t

$$rt = y + 2n$$

$$t = (y + 2n)/r$$

13. $kn + 4f = 9v$, for n

$$kn = 9v - 4f$$

$$n = (9v - 4f)/k$$

15. $\frac{x - c}{2} = d$, for x

$$x - c = 2d$$

$$x = 2d + c$$

17. $\frac{p + 9}{5} = r$, for p

$$p + 9 = 5r$$

$$p = 5r - 9$$

19. The volume of a box V is given by the formula $V = lwh$, where l is the length, w is the width, and h is the height.

a. Solve the formula for h .

$$h = \frac{V}{lw}$$

b. What is the height of a box with a volume of 50 cubic meters, length of 10 meters, and width of 2 meters?

$$h = \frac{50}{10(2)} = \frac{50}{20} = \frac{5}{2} = 2.5 \text{ meters}$$

20. Trent purchases 44 euros worth of souvenirs while on vacation in France. If \$1 U.S. = 0.678 euros, find the cost of the souvenirs in United States dollars. Round to the nearest cent.

2. $r = wp$, for p

$$p = \frac{r}{w}$$

4. $4m - t = m$, for m

$$-t = -3m \rightarrow m = \frac{t}{3}$$

6. $-5c + d = 2c$, for c

$$d = 7c$$

$$c = d/7$$

8. $d + 3n = 1$, for n

$$3n = 1 - d$$

$$n = \frac{1 - d}{3}$$

10. $ax - c = b$, for x

$$ax = b + c$$

$$x = (b + c)/a$$

12. $bc + 3g = 2k$, for c

$$bc = 2k - 3g$$

$$c = \frac{2k - 3g}{b}$$

14. $8c + 6j = 5p$, for c

$$8c = 5p - 6j$$

$$c = (5p - 6j)/8$$

16. $\frac{x - c}{2} = d$, for c

$$x - c = 2d$$

$$-c = 2d - x$$

$$c = -2d + x$$

18. $\frac{b - 4z}{7} = a$, for b

$$b - 4z = 7a$$

$$b = 7a + 4z$$