

A.A.23: Transforming Formulas 4: Solve literal equations for a given variable

- 1 If $bx - 2 = K$, then x equals
- 2 If $x = 2a - b^2$, then a equals
- 3 If $2m + 2p = 16$, p equals
- 4 In the equation $A = p + prt$, t is equivalent to
- 5 If $c = 2m + d$, then m is equal to
- 6 Sean knows the length of the base, b , and the area, A , of a triangular window in his bedroom. Which formula could he use to find the height, h , of this window?
- 7 The formula for the volume of a right circular cylinder is $V = \pi r^2 h$. The value of h can be expressed as
- 8 The formula for potential energy is $P = mgh$, where P is potential energy, m is mass, g is gravity, and h is height. Which expression can be used to represent g ?
- 9 If $9x + 2a = 3a - 4x$, then x equals
- 10 If $x + y = 9x + y$, then x is equal to
- 11 If $7x + 2a = 3x + 5a$, then x is equivalent to
- 12 If $2ax - 5x = 2$, then x is equivalent to
- 13 If $\frac{x}{4} - \frac{a}{b} = 0$, $b \neq 0$, then x is equal to
- 14 The equation $P = 2L + 2W$ is equivalent to
 - 1) $L = \frac{P - 2W}{2}$
 - 2) $L = \frac{P + 2W}{2}$
 - 3) $2L = \frac{P}{2W}$
 - 4) $L = P - W$
- 15 Which equation is equivalent to $3x + 4y = 15$?
 - 1) $y = \frac{15 - 3x}{4}$
 - 2) $y = \frac{3x - 15}{4}$
 - 3) $y = 15 - 3x$
 - 4) $y = 3x - 15$
- 16 Solve: $(a - x)(b - x) = x^2$
- 17 Shoe sizes and foot length are related by the formula $S = 3F - 24$, where S represents the shoe size and F represents the length of the foot, in inches.
 - a Solve the formula for F .
 - b To the *nearest tenth of an inch*, how long is the foot of a person who wears a size $10\frac{1}{2}$ shoe?

A.A.23: Transforming Formulas 4: Solve literal equations for a given variable Answer Section

1 ANS:

$$\frac{K+2}{b}$$

$$bx - 2 = K$$

$$bx = K + 2$$

$$x = \frac{K+2}{b}$$

REF: 010116a

2 ANS:

$$\frac{x+b^2}{2}$$

$$x = 2a - b^2$$

$$x + b^2 = 2a$$

$$\frac{x+b^2}{2} = a$$

REF: 060219a

3 ANS:

$$8 - m$$

$$2m + 2p = 16$$

$$2p = 16 - 2m$$

$$p = \frac{16 - 2m}{2}$$

$$p = \frac{2(8 - m)}{2}$$

$$p = 8 - m$$

REF: 080218a

4 ANS:

$$\frac{A-p}{pr}$$

$$A = p + prt$$

$$A - p = prt$$

$$\frac{A-p}{pr} = t$$

REF: 010620a

5 ANS:

$$\frac{c-d}{2}$$

$$c = 2m + d$$

$$c - d = 2m$$

$$m = \frac{c-d}{2}$$

REF: 060719a

6 ANS:

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

$$A = \frac{1}{2}bh$$

$$2A = bh$$

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

REF: 010517a

7 ANS:

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

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

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

REF: 060617a

8 ANS:

$$\frac{P}{mh}$$

$$P = mgh$$

$$g = \frac{P}{mh}$$

REF: 010710a

9 ANS:

$$\frac{a}{13}$$

$$9x + 2a = 3a - 4x$$

$$a = 13x$$

$$\frac{a}{13} = x$$

REF: 010011a

10 ANS:

$$0$$

$$x + y = 9x + y$$

$$x = 9x$$

$$0 = 8x$$

$$x = 0$$

REF: 060310a

11 ANS:

$$\frac{3a}{4}$$

$$7x + 2a = 3x + 5a$$

$$4x = 3a$$

$$x = \frac{3a}{4}$$

REF: 060513a

12 ANS:

$$\frac{2}{2a-5}$$

$$2ax - 5x = 2$$

$$x(2a - 5) = 2$$

$$x = \frac{2}{2a-5}$$

REF: 010421a

13 ANS:

$$\frac{4a}{b}$$

$$\frac{x}{4} - \frac{a}{b} = 0$$

$$\frac{x}{4} = \frac{a}{b}$$

$$bx = 4a$$

$$x = \frac{4a}{b}$$

REF: 080530a

14 ANS: 1

$$P = 2L + 2W$$

$$P - 2W = 2L$$

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

REF: 010310a

15 ANS: 1

$$3x + 4y = 15$$

$$4y = 15 - 3x$$

$$y = \frac{15 - 3x}{4}$$

REF: 080722a

16 ANS:

$$\frac{a^2}{a+b}$$

REF: 039008a1

17 ANS:

$$\begin{aligned} S &= 3F - 24 \\ \frac{S+24}{3}, 11.5. \quad S + 24 &= 3F \quad . \quad F = \frac{(10.5) + 24}{3} = 11.5 \\ F &= \frac{S + 24}{3} \end{aligned}$$

REF: 069922a