

**A.A.23: Transforming Formulas 2: Solve literal equations for a given variable**

- 1 If  $rx - st = r$ , which expression represents  $x$ ?
- 2 If  $3ax + b = c$ , then  $x$  equals
- 3 If  $abx - 5 = 0$ , what is  $x$  in terms of  $a$  and  $b$ ?
- 4 If the formula for the perimeter of a rectangle is  $P = 2l + 2w$ , then  $w$  can be expressed as
- 5 If  $2y + 2w = x$ , then  $w$ , in terms of  $x$  and  $y$ , is equal to
- 6 The members of the senior class are planning a dance. They use the equation  $r = pn$  to determine the total receipts. What is  $n$  expressed in terms of  $r$  and  $p$ ?
- 7 The formula for the volume of a pyramid is  $V = \frac{1}{3}Bh$ . What is  $h$  expressed in terms of  $B$  and  $V$ ?
- 8 A formula used for calculating velocity is  $v = \frac{1}{2}at^2$ . What is  $a$  expressed in terms of  $v$  and  $t$ ?
- 9 If  $s = \frac{2x+t}{r}$ , then  $x$  equals
- 10 If  $\frac{ey}{n} + k = t$ , what is  $y$  in terms of  $e$ ,  $n$ ,  $k$ , and  $t$ ?
- 11 If  $a + ar = b + r$ , the value of  $a$  in terms of  $b$  and  $r$  can be expressed as
- 12 If  $k = am + 3mx$ , the value of  $m$  in terms of  $a$ ,  $k$ , and  $x$  can be expressed as
- 13 If  $ax + 3 = 7 - bx$ , what is  $x$  expressed in terms of  $a$  and  $b$ ?
- 14 If  $z + y = x + xy^2$ , what is  $x$  expressed in terms of  $y$  and  $z$ ?
- 15 Solve for  $c$  in terms of  $a$  and  $b$ :  $bc + ac = ab$

# A.A.23: Transforming Formulas 2: Solve literal equations for a given variable Answer Section

1 ANS:

$$\frac{r+st}{r}$$

$$rx - st = r$$

$$rx = r + st$$

$$x = \frac{r+st}{r}$$

REF: 061316ia

2 ANS:

$$\frac{c-b}{3a}$$

$$3ax + b = c$$

$$3ax = c - b$$

$$x = \frac{c-b}{3a}$$

REF: 080808ia

3 ANS:

$$x = \frac{5}{ab}$$

$$abx - 5 = 0$$

$$abx = 5$$

$$x = \frac{5}{ab}$$

REF: 011425ia

4 ANS:

$$w = \frac{P-2l}{2}$$

$$P = 2l + 2w$$

$$P - 2l = 2w$$

$$\frac{P-2l}{2} = w$$

REF: 010911ia

5 ANS:

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

$$2y + 2w = x$$

$$2w = x - 2y$$

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

REF: 081330ia

6 ANS:

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

REF: 011016ia

7 ANS:

$$h = \frac{3V}{B}$$

REF: 081230ia

8 ANS:

$$a = \frac{2v}{t^2}$$

REF: 061023ia

9 ANS:

$$\frac{rs-t}{2}$$

$$s = \frac{2x+t}{r}$$

$$rs = 2x + t$$

$$rs - t = 2x$$

$$\frac{rs-t}{2} = x$$

REF: 011228ia

10 ANS:

$$y = \frac{n(t-k)}{e}$$

$$\frac{ey}{n} + k = t$$

$$\frac{ey}{n} = t - k$$

$$y = \frac{n(t-k)}{e}$$

REF: 011125ia

11 ANS:

$$\frac{b+r}{1+r}$$

$$a + ar = b + r$$

$$a(1+r) = b + r$$

$$a = \frac{b+r}{1+r}$$

REF: 060913ia

12 ANS:

$$\frac{k}{a+3x}$$

$$k = am + 3mx$$

$$k = m(a+3x)$$

$$\frac{k}{a+3x} = m$$

REF: 061215ia

13 ANS:

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

$$ax + 3 = 7 - bx$$

$$ax + bx = 4$$

$$x(a+b) = 4$$

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

REF: 081426ia

14 ANS:

$$\frac{z+y}{1+y^2}$$

$$z+y=x(1+y^2)$$

$$\frac{z+y}{1+y^2}=x$$

REF: 061524ia

15 ANS:

$$bc+ac=ab$$

$$c(b+a)=ab$$

$$c=\frac{ab}{b+a}$$

REF: 081131ia