

A.A.23: Transforming Formulas 1: Solve literal equations for a given variable

- 1 If $rx - st = r$, which expression represents x ?
 - 1) $\frac{r+st}{r}$
 - 2) $\frac{r}{r+st}$
 - 3) $\frac{r}{r-st}$
 - 4) $\frac{r-st}{r}$
- 2 If $3ax + b = c$, then x equals
 - 1) $c - b + 3a$
 - 2) $c + b - 3a$
 - 3) $\frac{c-b}{3a}$
 - 4) $\frac{b-c}{3a}$
- 3 If $abx - 5 = 0$, what is x in terms of a and b ?
 - 1) $x = \frac{5}{ab}$
 - 2) $x = -\frac{5}{ab}$
 - 3) $x = 5 - ab$
 - 4) $x = ab - 5$
- 4 If the formula for the perimeter of a rectangle is $P = 2l + 2w$, then w can be expressed as
 - 1) $w = \frac{2l-P}{2}$
 - 2) $w = \frac{P-2l}{2}$
 - 3) $w = \frac{P-l}{2}$
 - 4) $w = \frac{P-2w}{2l}$
- 5 If $2y + 2w = x$, then w , in terms of x and y , is equal to
 - 1) $x - y$
 - 2) $\frac{x-2y}{2}$
 - 3) $x + y$
 - 4) $\frac{x+2y}{2}$
- 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 ?
 - 1) $n = r + p$
 - 2) $n = r - p$
 - 3) $n = \frac{p}{r}$
 - 4) $n = \frac{r}{p}$
- 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 ?
 - 1) $h = \frac{1}{3}VB$
 - 2) $h = \frac{V}{3B}$
 - 3) $h = \frac{3V}{B}$
 - 4) $h = 3VB$

- 8 A formula used for calculating velocity is

$$v = \frac{1}{2}at^2. \text{ What is } a \text{ expressed in terms of } v \text{ and } t?$$

- 1) $a = \frac{2v}{t}$
- 2) $a = \frac{2v}{t^2}$
- 3) $a = \frac{v}{t}$
- 4) $a = \frac{v}{2t^2}$

- 9 If $s = \frac{2x+t}{r}$, then x equals

- 1) $\frac{rs-t}{2}$
- 2) $\frac{rs+1}{2}$
- 3) $2rs-t$
- 4) $rs-2t$

- 10 If $\frac{ey}{n} + k = t$, what is y in terms of e , n , k , and t ?

- 1) $y = \frac{tn+k}{e}$
- 2) $y = \frac{tn-k}{e}$
- 3) $y = \frac{n(t+k)}{e}$
- 4) $y = \frac{n(t-k)}{e}$

- 11 If $a + ar = b + r$, the value of a in terms of b and r can be expressed as

- 1) $\frac{b}{r} + 1$
- 2) $\frac{1+b}{r}$
- 3) $\frac{b+r}{1+r}$
- 4) $\frac{1+b}{r+b}$

- 12 If $k = am + 3mx$, the value of m in terms of a , k , and x can be expressed as

- 1) $\frac{k}{a+3x}$
- 2) $\frac{k-3mx}{a}$
- 3) $\frac{k-am}{3x}$
- 4) $\frac{k-a}{3x}$

- 13 If $ax + 3 = 7 - bx$, what is x expressed in terms of a and b ?

- 1) $\frac{4}{ab}$
- 2) $-\frac{4}{ab}$
- 3) $\frac{4}{a+b}$
- 4) $-\frac{4}{a+b}$

- 14 If $z + y = x + xy^2$, what is x expressed in terms of y and z ?

- 1) $\frac{z}{y}$
- 2) $\frac{z}{1+y}$
- 3) $\frac{z+1}{y}$
- 4) $\frac{z+y}{1+y^2}$

- 15 Solve for c in terms of a and b : $bc + ac = ab$

A.A.23: Transforming Formulas 1: Solve literal equations for a given variable Answer Section

1 ANS: 1

$$rx - st = r$$

$$rx = r + st$$

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

REF: 061316ia

2 ANS: 3

$$3ax + b = c$$

$$3ax = c - b$$

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

REF: 080808ia

3 ANS: 1

$$abx - 5 = 0$$

$$abx = 5$$

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

REF: 011425ia

4 ANS: 2

$$P = 2l + 2w$$

$$P - 2l = 2w$$

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

REF: 010911ia

5 ANS: 2

$$2y + 2w = x$$

$$2w = x - 2y$$

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

REF: 081330ia

6 ANS: 4

REF: 011016ia

7 ANS: 3

REF: 081230ia

8 ANS: 2

REF: 061023ia

9 ANS: 1

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

$$rs = 2x + t$$

$$rs - t = 2x$$

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

REF: 011228ia

10 ANS: 4

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

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

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

REF: 011125ia

11 ANS: 3

$$a + ar = b + r$$

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

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

REF: 060913ia

12 ANS: 1

$$k = am + 3mx$$

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

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

REF: 061215ia

13 ANS: 3

$$ax + 3 = 7 - bx$$

$$ax + bx = 4$$

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

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

REF: 081426ia

14 ANS: 4

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

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

REF: 061524ia

15 ANS:

$$bc + ac = ab$$

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

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

REF: 081131ia