

A.A.23: Solve literal equations for a given variable.

1. 010310a, P.I. A.A.23

The equation $P = 2L + 2W$ is equivalent to

[A] $L = \frac{P-2W}{2}$ [B] $L = \frac{P+2W}{2}$

[C] $2L = \frac{P}{2W}$ [D] $L = P - W$

2. 010911ia, P.I. A.A.23

If the formula for the perimeter of a rectangle is $P = 2l + 2w$, then w can be expressed as

[A] $w = \frac{P-l}{2}$ [B] $w = \frac{P-2w}{2l}$

[C] $w = \frac{P-2l}{2}$ [D] $w = \frac{2l-P}{2}$

3. 010620a, P.I. A.A.23

In the equation $A = p + prt$, t is equivalent to

[A] $\frac{A-pr}{p}$ [B] $\frac{A-p}{pr}$

[C] $\frac{A}{pr} - p$ [D] $\frac{A}{P} - pr$

4. 010517a, P.I. A.A.23

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?

[A] $h = (2A)(b)$ [B] $h = \frac{A}{2b}$

[C] $h = \frac{2A}{b}$ [D] $h = 2A - b$

5. 060617a, P.I. A.A.23

The formula for the volume of a right circular cylinder is $V = \pi r^2 h$. The value of h can be expressed as

[A] $\frac{V}{\pi} r^2$ [B] $V - \pi r^2$

[C] $\frac{V}{\pi r^2}$ [D] $\frac{\pi r^2}{V}$

6. 010710a, P.I. A.A.23

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 ?

[A] $P - m - h$ [B] $\frac{P}{m} - h$

[C] $\frac{P}{mh}$ [D] $P - mh$

7. 080218a, P.I. A.A.23

If $2m + 2p = 16$, p equals

[A] $16 + 2m$ [B] $9m$

[C] $8 - m$ [D] $16 - m$

8. 010116a, P.I. A.A.23

If $bx - 2 = K$, then x equals

[A] $\frac{K-2}{b}$ [B] $\frac{K+2}{b}$

[C] $\frac{K}{b} + 2$ [D] $\frac{2-K}{b}$

9. 080808ia, P.I. A.A.23

If $3ax + b = c$, then x equals

[A] $\frac{b-c}{3a}$ [B] $\frac{c-b}{3a}$

[C] $c + b - 3a$ [D] $c - b + 3a$

10. 060719a, P.I. A.A.23

If $c = 2m + d$, then m is equal to

[A] $c - \frac{d}{2}$ [B] $\frac{c}{2} - d$

[C] $d - 2c$ [D] $\frac{c-d}{2}$

11. 060219a, P.I. A.A.23

If $x = 2a - b^2$, then a equals

[A] $\frac{x-b^2}{2}$ [B] $\frac{b^2-x}{2}$

[C] $x + b^2$ [D] $\frac{x+b^2}{2}$

12. 080530a, P.I. A.A.23

If $\frac{x}{4} - \frac{a}{b} = 0$, $b \neq 0$, then x is equal to

[A] $\frac{4a}{b}$ [B] $\frac{a}{4b}$ [C] $-\frac{4a}{b}$ [D] $-\frac{a}{4b}$

13. 080722a, P.I. A.A.23

Which equation is equivalent to $3x + 4y = 15$?

[A] $y = \frac{15-3x}{4}$ [B] $y = 15 - 3x$

[C] $y = \frac{3x-15}{4}$ [D] $y = 3x - 15$

14. 060310a, P.I. A.A.23

If $x + y = 9x + y$, then x is equal to

[A] 0 [B] 8 [C] $\frac{1}{5}y$ [D] y

15. 010011a, P.I. A.A.23

If $9x + 2a = 3a - 4x$, then x equals

[A] a [B] $-a$ [C] $\frac{5a}{12}$ [D] $\frac{a}{13}$

16. 060513a, P.I. A.A.23

If $7x + 2a = 3x + 5a$, then x is equivalent to

[A] $\frac{3a}{4}$ [B] $\frac{7a}{4}$ [C] $\frac{3a}{10}$ [D] $\frac{7a}{10}$

17. 010421a, P.I. A.A.23

If $2ax - 5x = 2$, then x is equivalent to

[A] $\frac{2}{2a-5}$ [B] $\frac{2+5a}{2a}$

[C] $\frac{1}{a-5}$ [D] $7 - 2a$

18. 060913ia, P.I. A.A.23

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

[A] $\frac{1+b}{r+b}$ [B] $\frac{1+b}{r}$

[C] $\frac{b+r}{1+r}$ [D] $\frac{b}{r} + 1$

19. 069922a, P.I. A.A.23

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: Solve literal equations for a given variable.

[1] A _____

[2] C _____

[3] B _____

[4] C _____

[5] C _____

[6] C _____

[7] C _____

[8] B _____

[9] B _____

[10] D _____

[11] D _____

[12] A _____

[13] A _____

[14] A _____

[15] D _____

[16] A _____

[17] A _____

[18] C _____

a [1] $\frac{S+24}{3}$ or $\frac{S}{3}+8$

b [1] 11.5

or [1] Correct substitution into an incorrect part a is shown, and the answer is given to the nearest tenth of an inch.

a and b

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[19] incorrect procedure. _____