

1. 080218a, P.I. A.A.23
If $2m + 2p = 16$, p equals
[A] $16 + 2m$ [B] $9m$
[C] $16 - m$ [D] $8 - m$

2. 010116a, P.I. A.A.23
If $bx - 2 = K$, then x equals
[A] $\frac{K-2}{b}$ [B] $\frac{K}{b} + 2$
[C] $\frac{K+2}{b}$ [D] $\frac{2-K}{b}$

3. 080808ia, P.I. A.A.23
If $3ax + b = c$, then x equals
[A] $\frac{c-b}{3a}$ [B] $c - b + 3a$
[C] $c + b - 3a$ [D] $\frac{b-c}{3a}$

4. 060719a, P.I. A.A.23
If $c = 2m + d$, then m is equal to
[A] $c - \frac{d}{2}$ [B] $d - 2c$
[C] $\frac{c-d}{2}$ [D] $\frac{c}{2} - d$

5. 060219a, P.I. A.A.23
If $x = 2a - b^2$, then a equals
[A] $\frac{x-b^2}{2}$ [B] $x + b^2$
[C] $\frac{b^2 - x}{2}$ [D] $\frac{x + b^2}{2}$

6. 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

7. 010011a, P.I. A.A.23
If $9x + 2a = 3a - 4x$, then x equals
[A] $\frac{5a}{12}$ [B] $-a$ [C] $\frac{a}{13}$ [D] a

8. 060513a, P.I. A.A.23
If $7x + 2a = 3x + 5a$, then x is equivalent to
[A] $\frac{3a}{10}$ [B] $\frac{3a}{4}$ [C] $\frac{7a}{4}$ [D] $\frac{7a}{10}$

9. 010421a, P.I. A.A.23
If $2ax - 5x = 2$, then x is equivalent to
[A] $\frac{2+5a}{2a}$ [B] $\frac{2}{2a-5}$
[C] $\frac{1}{a-5}$ [D] $7 - 2a$

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

11. 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] $-\frac{a}{4b}$ [D] $\frac{4a}{b}$

12. 080722a, P.I. A.A.23

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

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

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

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

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

14. 010310a, P.I. A.A.23

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

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

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

15. 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] $\frac{A}{P} - pr$

16. 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] $h = \frac{2A}{b}$ [B] $h = \frac{A}{2b}$

[C] $h = (2A)(b)$ [D] $h = 2A - b$

17. 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] $\frac{\pi r^2}{V}$ [B] $\frac{V}{\pi r^2}$

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

18. 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] $\frac{P}{m} - h$ [B] $P - mh$

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

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?

[1] D _____

[2] C _____

[3] A _____

[4] C _____

[5] D _____

[6] A _____

[7] C _____

[8] B _____

[9] B _____

[10] B _____

[11] D _____

[12] B _____

[13] B _____

[14] C _____

[15] B _____

[16] A _____

[17] B _____

[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. _____