

1

Salim wants to purchase tickets from a vendor to watch a tennis match. The vendor charges a one-time service fee for processing the purchase of the tickets. The equation $T = 15n + 12$ represents the total amount T , in dollars, Salim will pay for n tickets. What does 12 represent in the equation?

- A) The price of one ticket, in dollars
- B) The amount of the service fee, in dollars
- C) The total amount, in dollars, Salim will pay for one ticket
- D) The total amount, in dollars, Salim will pay for any number of tickets

price of each ticket

service fee

$$y = \frac{m}{\text{rate}}x + b$$

↓
↓
initial value

2

A gardener buys two kinds of fertilizer. Fertilizer A contains 60% filler materials by weight and Fertilizer B contains 40% filler materials by weight. Together, the fertilizers bought by the gardener contain a total of 240 pounds of filler materials. Which equation models this relationship, where x is the number of pounds of Fertilizer A and y is the number of pounds of Fertilizer B?

- A) $0.4x + 0.6y = 240$
- B) $0.6x + 0.4y = 240$
- C) $40x + 60y = 240$
- D) $60x + 40y = 240$

$$.6x + .4y = 240$$

3

What is the sum of the complex numbers $2 + 3i$ and $4 + 8i$, where $i = \sqrt{-1}$?

- A) 17
 B) $17i$
 C) $6 + 11i$
 D) $8 + 24i$

$$\begin{array}{r} \underline{2} + \underline{3i} + \underline{4} + \underline{8i} \\ \hline 6 + 11i \end{array}$$

4

$$4x^2 - 9 = (px + t)(px - t)$$

In the equation above, p and t are constants.

4

$$4x^2 - 9 = (\underline{p}x + \underline{t})(\underline{p}x - t)$$

In the equation above, p and t are constants.

Which of the following could be the value of p ?

- A) 2
 B) 3
 C) 4
 D) 9

$$(\underline{2}x + \underline{3})(\underline{2}x - 3)$$

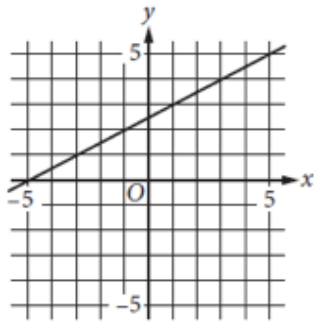
$$p = 2$$

5

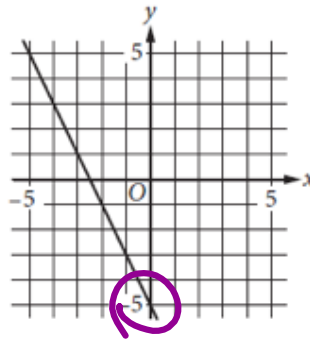
Which of the following is the graph of the equation $y = 2x - 5$ in the xy -plane?

-5 \rightarrow y -int

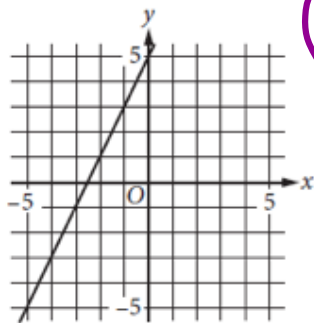
A)



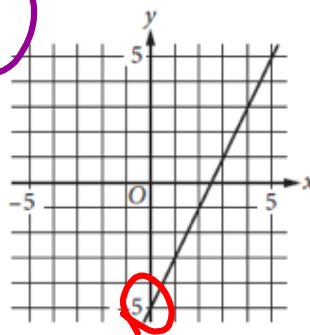
B)



C)



D)



6

If $x = \frac{2}{3}y$ and $y = 18$, what is the value of $2x - 3$?

- (A) 21
- (B) 15
- (C) 12
- (D) 10

$x = \frac{2}{3} \cdot 18 = 12$

$2(12) - 3$

$24 - 3 = 21$

7

A bricklayer uses the formula $n = 7\ell h$ to estimate the number of bricks, n , needed to build a wall that is ℓ feet long and h feet high. Which of the following correctly expresses ℓ in terms of

8

The table above shows functions w and t such that $w(x) + t(x) =$

- (A) 1
- (B) 2
- (C) 3
- (D) 4

7

A bricklayer uses the formula $n = 7\ell h$ to estimate the number of bricks, n , needed to build a wall that is ℓ feet long and h feet high. Which of the following correctly expresses ℓ in terms of n and h ?

A) $\ell = \frac{7}{nh}$

B) $\ell = \frac{h}{7n}$

C) $\ell = \frac{n}{7h}$

D) $\ell = \frac{n}{7+h}$

$$n = 7\ell h$$

$$\frac{n}{7h} = \ell$$

$$\frac{n}{7h} = \ell$$

8

x	$w(x)$	$t(x)$
1	-1	-3
2	3	-1
3	4	1
4	3	3
5	-1	5

\neq

The table above shows some values of the functions w and t . For which value of x is $w(x) + t(x) = x$?

A) 1

B) 2

C) 3

D) 4

$$x = 5 \quad w(5) = -1$$

$$t(5)$$

9

If $\sqrt{x} + \sqrt{9} = \sqrt{64}$, what is the value of x ?

- A) $\sqrt{5}$
- B) 5
- C) 25
- D) 55

$$\sqrt{x} + 3 = 8$$

$$\sqrt{x} = 5$$

$$\sqrt{25}$$
