# Exercise Set 3 (No Calculator)

**1**

If $x - 2(1 - x) = 5$, what is the value of $x$?

**2**

If $f(x) = -2x + 8$, and $f(k) = -10$, what is the value of $k$?

**3**

What is the slope of the line that contains the points $(-2, 3)$ and $(4, 5)$?

**4**

What is the slope of the line described by the equation $\dfrac{1}{x} + \dfrac{1}{2x} = \dfrac{5}{y}$?

**5**

Line $l$ is perpendicular to the line described by the equation $5x + 11y = 16$. What is the slope of line $l$?

**6**

If $\dfrac{x+1}{10} + \dfrac{2x}{5} = 1$, what is the value of $x$?

**7**

What is the $y$-intercept of the line containing the points $(3, 7)$ and $(6, 3)$?

**8**

In the $xy$-plane, the graph of $y = h(x)$ is a line with slope $-2$. If $h(3) = 1$ and $h(b) = -9$, what is the value of $b$?

**9**

If a train maintains a constant speed of 60 miles per hour, it can travel 4 miles per gallon of diesel fuel. If this train begins a trip with a full 200 gallon tank of diesel fuel, and maintains a speed of 60 miles per hour, which of the following equations represents the number of gallons, $g$, left in the tank $t$ hours into the trip?
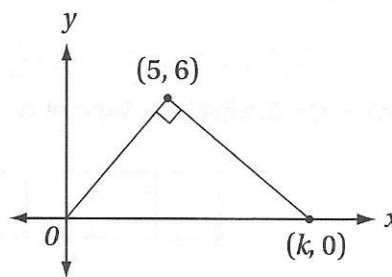
A) $g = \dfrac{200 - 60t}{4}$

B) $g = 200 - \dfrac{1}{15t}$

C) $g = 200 - 15t$

D) $g = 200 - \dfrac{1}{15}t$

**10**

The points $A(2, 3)$ and $B(m, 11)$, are 10 units apart. Which of the following equations could describe the line that contains points $A$ and $B$?

A)  $8x + 6y = 11$

B)  $8x - 6y = -2$

C)  $6x + 8y = 36$

D)  $6x - 8y = -12$

**11**



The figure above shows a right triangle with vertices at the origin, $(5, 6)$ and $(k, 0)$. What is the value of $k$?

A)  $\dfrac{19}{3}$

B)  $\dfrac{58}{5}$

C)  $\dfrac{26}{3}$

D)  $\dfrac{61}{5}$