2.5: Linear functions

1. Let f be a linear function such that $f(-3) = \frac{1}{2}$ and $f(1) = \frac{5}{2}$, then $f(7) =$

   A) $\frac{11}{2}$

   B) 5

   C) $\frac{13}{2}$

   D) $\frac{7}{3}$

   E) 6

2. Let $y = f(x)$ be a linear function with $f(1) = 5$ and $f(k) = 15$. If the graph of f is parallel to the line $2x + y = 3$, then $k =$

   A) -4

   B) 2

   C) 3

   D) -2

   E) 4

3. Which one of the following statements is FALSE for the function $f(x) = -5$?

A) The range of f is $(-\infty, -5]$

B) The graph of f passes through $(-5, -5)$

C) The domain of f is $(-\infty, \infty)$

D) The graph of f has y-intercept -5

E) The graph of f is a line with slope zero

4. If $f(x)$ is a linear function with $f(2) = 1, f(-1) = 2$, then the x-intercept of the graph of $f(x)$ is

A) 5

B) -3

C) -8

D) -5

E) 0

5. If (a, b) is the intersection point of the graphs of $f_1(x) = -3x - 7$ and $f_2(x) = 2x + 13$, then $a + b =$

A) 1

B) -2

C) 4

D) -3

E) 3

6. If a walkway rises 1.7ft for every 3.4ft on the horizontal, then the slope of the walkway is

A) $1/2$

B) 2

C) $-1/2$

D) -2

E) 0

7. If $f(x)$ is a linear function with $f(2) = 2$ and $f(3) = 0$ then $f(4)$ is equal to:

A) -2

B) 2

C) $-1/2$

D) $1/2$

8. If $f(x)$ is a linear function such that $f(-3) = -4$ and $f(2) = 11$ then $f(5) =$

A) 20

9. Which one of the following statements is TRUE?

A) the slope of the line rises from left to right is positive.

B) the slope of the line $x = 5$ is 0

C) the slope of the line $y = 5$ is 5

D) the range of the line $y = 5$ is $[0, \infty)$

E) the domain of the relation $x = 5$ is $(-\infty, \infty)$

10. If $y = f(x)$ is a linear function such that $f(-1) = 3$ and $f(3) = 4$, then $f(-5) =$

A) 2

B) -2

C) $\frac{9}{2}$

D) $-\frac{9}{2}$

E) 4

11. Let f be a linear function such that $f(2) = c$. If the graph of f is parallel to the line $cx - 2x + y = 3$, then $f(3) =$

A) 2

B) -3

C) -2

D) 3

E) 5

12. Let f be a linear function such that $f(t) = -\frac{1}{2}$ and $f(t+2) = \frac{7}{2}$, then $f\left(\mathrm{t} - \frac{3}{4}\right) =$

A) $-\frac{3}{2}$

B) -2

13. If f is a linear function such that $f(2) = 6, f(k) = 15$ and its graph is parallel to the line $3x + 2y + 4 = 0$, then $k =$

A) -4

14. Which one of the following statements is TRUE?

A) the slope of the line $25x - 5y - 6 = 0$ is 5

B) the slope of the line $y = 5$ is 5

C) the slope of the line $x = 5$ is 5

D) the range of the graph of $x = 5$ is $\{5\}$

E) the domain of the graph of $y = 5$ is {5}

15. If the graph of a linear function has y-intercept $(0,6)$ and slope -2, then the graph is passing through the point

A) $(2,2)$