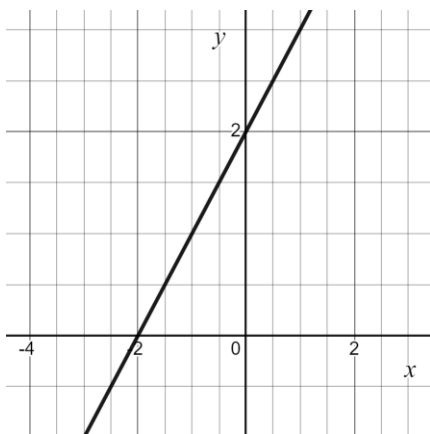# Linear Equations (Basic)

Multiple Choice

1. The graph in the standard (x, y) coordinate plane below represents which of the following equations?

   A) $x = y$
   B) $x = -1 + y$
   C) $y = x + 2$
   D) $y = -x - 2$

2. An internet service provider charges a \$100 per month flat fee, plus \$3 for every megabyte of data used. Which of the following equations models the relationship between C, the total monthly cost, and D, the amount of data, in megabytes, used per month?
   A) $D = 100C + 3$
   B) $D = 3C + 100$
   C) $C = 100D + 3$
   D) $C = 3D + 100$

3. A line, m, graphed on the standard (x, y) plane is represented by the equation $y = \frac{1}{2}x + 7$. Which of the following equations could represent a line perpendicular to m?

   A) $y = -2x + 7$

   B) $y = -\frac{1}{2}x + 7$

   C) $y = \frac{1}{2}x - 7$

   D) $y = 2x + 7$

4. The linear function h is defined by $h(x) = -\frac{1}{3}x + b$, where b is a constant. If $h(0) = 6$, which of the following defines h ?

A) $h(x) = -\frac{1}{3}x - 2$

B) $h(x) = -\frac{1}{3}x + 2$

C) $h(x) = -\frac{1}{3}x - 6$

D) $h(x) = -\frac{1}{3}x + 6$

5. In the standard (x, y) coordinate plane, what is the slope of the line $8x + 14y - 100 = 0$?

A) $-\frac{4}{7}$

B) $-\frac{7}{4}$

C) $\frac{25}{4}$

D) 8

6. In the xy-plane, the line with the equation $y = mx + 4$ is parallel to the line with the equation $3y = 4x + 6$. What is the value of m ?

A) $\frac{4}{3}$

B) 2

C) 4

D) 6

7. The points $(-3, -2), (0, 4)$, and $(2, 8)$ lie on a line in the standard (x, y) coordinate plane. Which of the following points also lies on that line?
A) $(-4, -4)$
B) $(-1, -5)$
C) $(1, 5)$
D) $(4, 4)$

8. Which one of the ordered pairs (x, y) in one of the following tables represents a linear function?

A)

x	y
0	1
1	0
2	1

B)

x	y
0	4
1	4
2	3

C)

x	y
0	1
1	5
2	4

D)

x	y
0	6
1	5
2	4

9. A line is graphed in the standard (x, y) coordinate plane. The line crosses the y-axis when $y = 5$. Another point on the line is $(4, 1)$. Which of the following is the equation of the line?
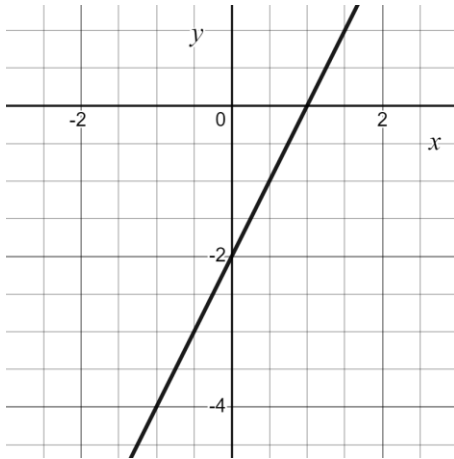
A) $y = -x + 5$
B) $y = -x - 5$
C) $y = \ x + 4$
D) $y = \ x + 5$

10. In the xy-plane, the graph of the linear function f contains the points $(0, 3)$ and $(2, 7)$. Which of the following defines f?

A) $f(x) = x + 3$
B) $f(x) = x - 3$
C) $f(x) = 2x + 3$
D) $f(x) = 2x - 3$

Grid-In

11. Line a is shown in the graph below. If line b (not shown) is parallel to line a, what is the slope of line b ?

12. In the standard (x, y) coordinate plane, what is the slope of the line $3x - 6y = 75$?

13. Better Cars is renting Simon a car. The deal they are offering is an initial charge of $40 plus $1.25 for every mile he drives the car. If the total cost of renting the car is $77.50, how many miles did Simon drive the car?

14. In the standard (x, y) coordinate plane, line q is parallel to line p. If line q passes through the points $(6,16)$ and $(4,4)$, what is the slope of line p?

15. Line c is shown in the graph below. If line d (not shown) is perpendicular to line c, what is the slope of line d ?