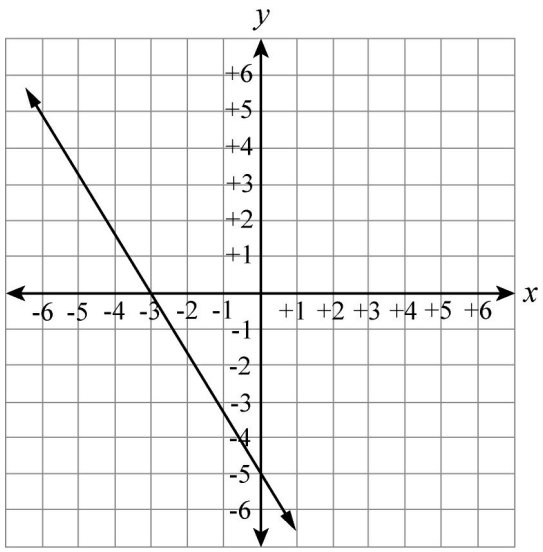
Fall 2016 Math Day

GO ON

1 A linear function is graphed on the coordinate plane below.



What is the y-intercept of the graph of the function?

A -5

B -3

C $-\frac{5}{3}$

D 0

2 Damien graphed the following linear function on an (x,y) coordinate plane.

$$f(x) = 6x + 12.6$$

What is the x-intercept of the graph of this function?

F -6.6

G -2.1

H 6

J 12.6

GO ON

3 What is the slope of the line that passes through points (6, 7) and (4, 2)?

A $-\frac{5}{2}$

B $\frac{1}{2}$

C 2

D $\frac{5}{2}$

4 What is the slope of the line that passes through the points (26, 7) and (-39, 12)?

F $-\frac{1}{13}$

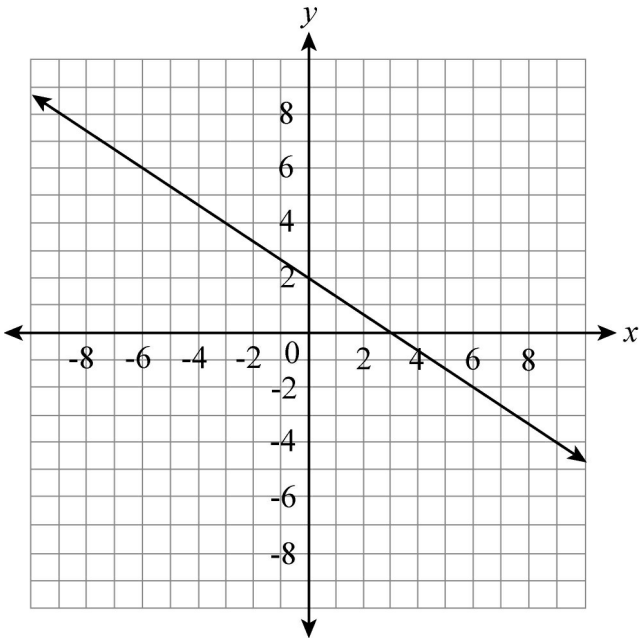
G $\frac{5}{13}$

H -13

J $\frac{13}{5}$

GO ON

5 What is the slope of the line shown in the graph below?



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

B $-\frac{2}{3}$

C $\frac{2}{3}$

D $\frac{3}{2}$

GO ON

6 Horacio's math teacher assigned 50 homework problems. The table below compares the number of homework problems Horacio has completed to the percentage of the homework he has yet to do.

Horacio's Homework

Problems Completed (x)	Percent Left to Do (y)
5	90
15	70
24	52
30	40
35	30

What is the slope of the line that fits these data?

F -2

G $-\frac{1}{50}$

H $\frac{1}{50}$

J 2

7 Which ordered pair is the solution to the following system of equations?

$$y = x + 4$$
$$x + y = 2$$

A (1, 5)

B (−1, 3)

C (0, 2)

D (−4, 0)

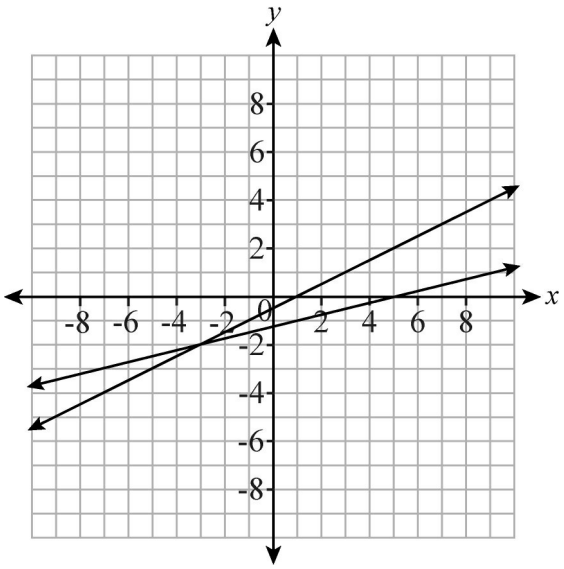
GO ON

8 A system of equations is shown below.

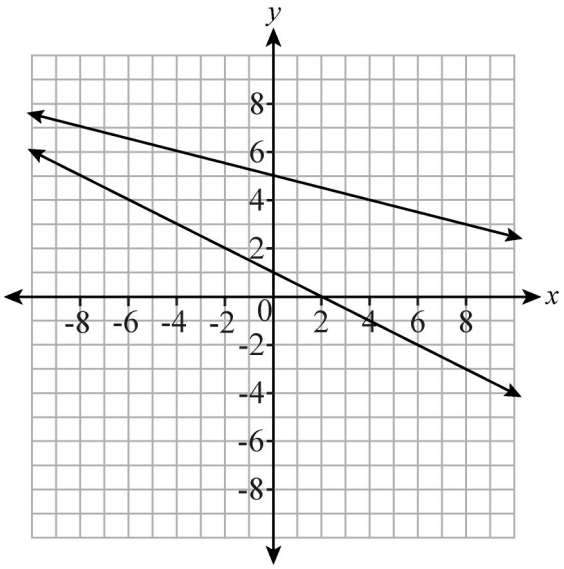
$$\begin{cases} x + 2y = 1 \\ x + 4y = 5 \end{cases}$$

Which of the following is a graph of this system of equations?

F

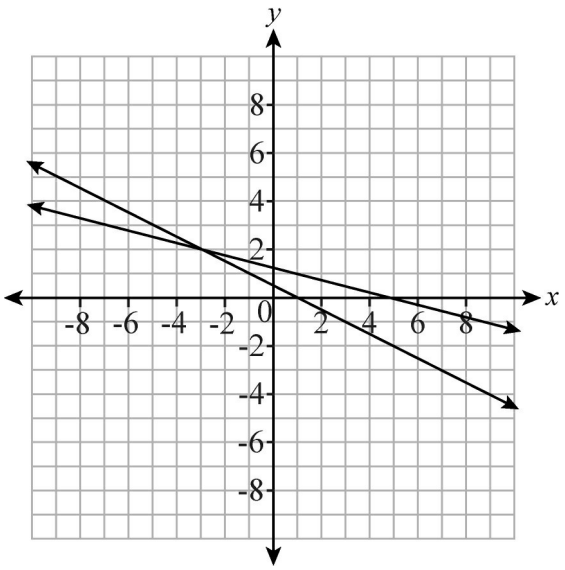


G

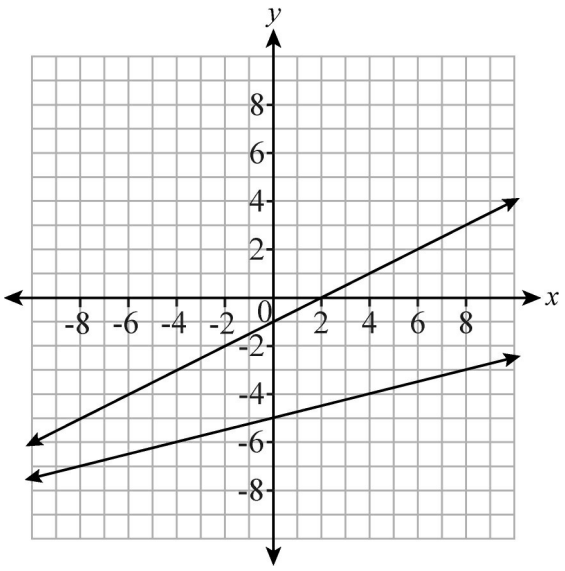


GO ON

H

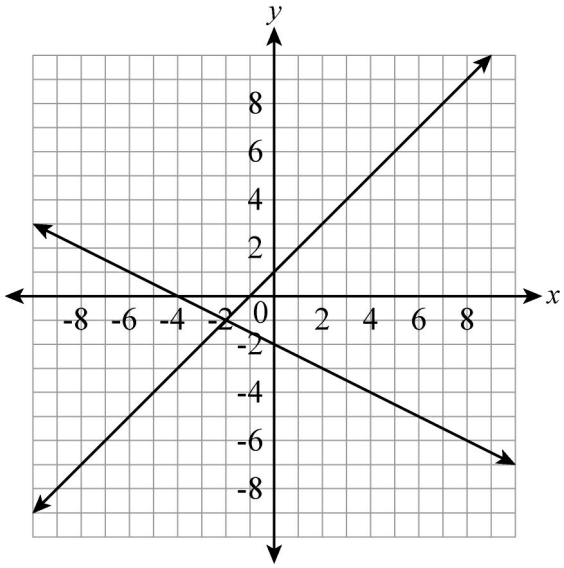


J



GO ON

9 What is the solution to the system of equations graphed below?



A (−1, −2)

B (0, −2)

C (−2, −1)

D (−2, 1)

10 Solve the following system of equations:

$$\frac{1}{2}x + \frac{1}{3}y = 1$$

$$\frac{1}{4}x + \frac{2}{3}y = 5$$

F (4, −9)

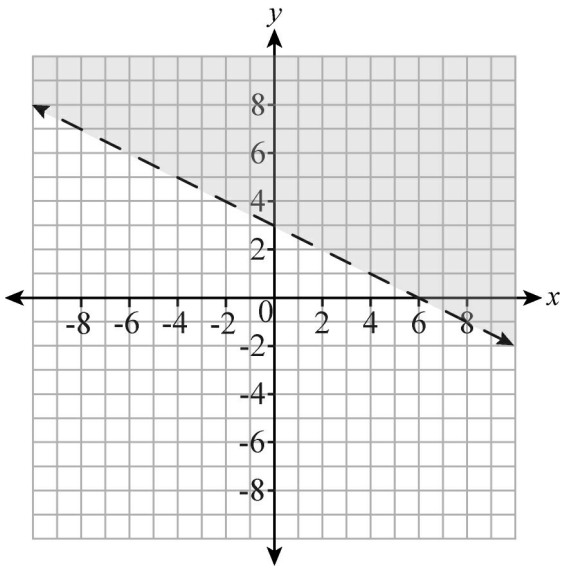
G (−4, 9)

H (4, 9)

J (−4, −9)

GO ON

11 The graph of an inequality is shown below.



Which inequality is shown?

A $2x + y > 6$

B $x + 2y > 6$

C $2x + y \geq 6$

D $x + 2y \geq 6$

12 Which point is a solution to the inequality in Question 7?

F (4, -4)

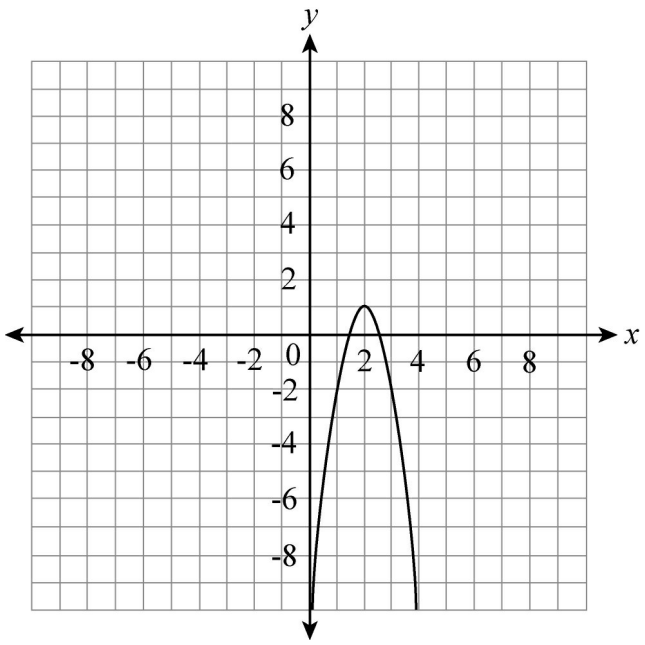
G (0, 0)

H (4, 4)

J (0, 3)

GO ON

13 Which of the following best describes the vertex of the parabola below?



A (2, 1); maximum

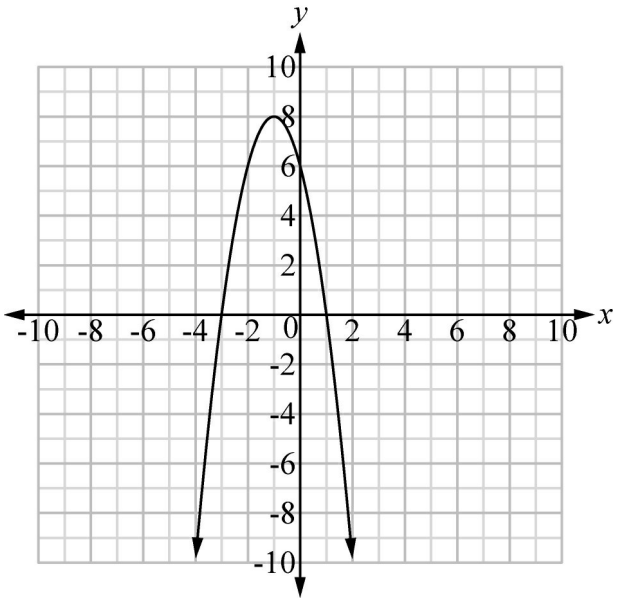
B (1, 2); minimum

C (1, 2); maximum

D (2, 1); minimum

GO ON

14 The quadratic equation $y = -2x^2 - 4x + 6$ is graphed below.



What are the zeros of the related function $f(x) = -2x^2 - 4x + 6$?

F -4 and -2

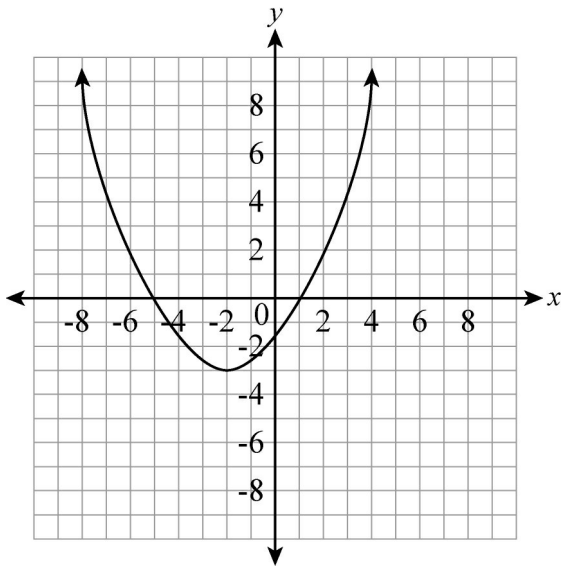
G -4 and 4

H -3 and 1

J 6 and 8

GO ON

15 What are the vertex and the axis of symmetry of the parabola shown in the diagram below?



A The vertex is $(-2, -3)$, and the axis of symmetry is $x = -2$.

B The vertex is $(-2, -3)$, and the axis of symmetry is $y = -2$.

C The vertex is $(-3, -2)$, and the axis of symmetry is $x = -2$.

D The vertex is $(-3, -2)$, and the axis of symmetry is $y = -2$.

GO ON

16 What are the solutions to the equation below?

$$4x^2 + 3x - 10 = 0$$

F $x = -2, -\frac{5}{4}$

G $x = -2, \frac{5}{4}$

H $x = -\frac{5}{4}, 2$

J $x = \frac{5}{4}, 2$

17 The table below shows a relationship between x and y.

x	y
-2	-5
0	1
2	7
4	13

Which of the following equations best represents this relationship?

A $y = -2x - 5$

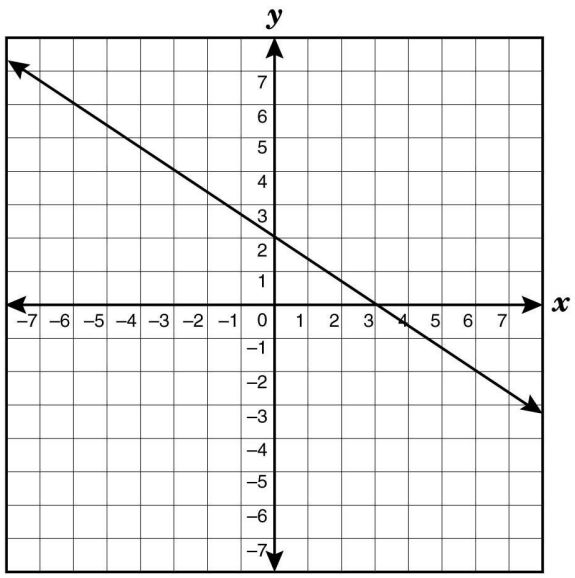
B $y = 3x - 1$

C $y = x + 1$

D $y = 3x + 1$

GO ON

18



Which expression below best describes the graph above?

F $y = \frac{2}{3}x + 2$

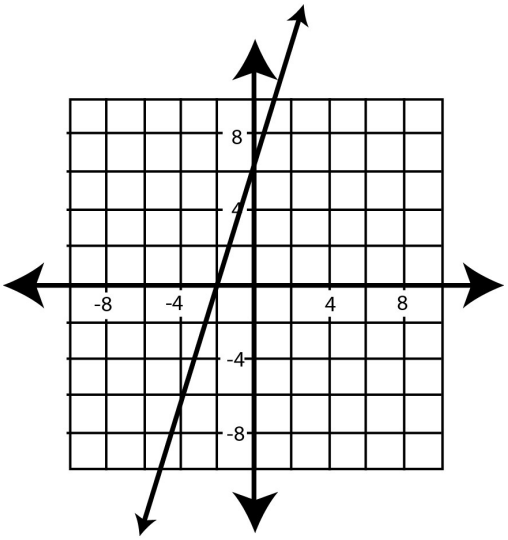
G $y = -\frac{2}{3}x + 3$

H $y = -\frac{2}{3}x + 2$

J $y = \frac{2}{3}x + 3$

GO ON

19



Which of the following equations best represents the line shown above?

A $y = \frac{1}{3}x - 2$

B $y = 3x - 2$

C $y = \frac{1}{3}x + 6$

D $y = 3x + 6$

GO ON

20 A bike shop rents each of its mountain bikes for a one-time $10.50 insurance charge plus $4.50 per hour. Which equation can be used to find y, the total dollar amount that a group of sightseers must pay to rent x bikes for 6 hours?

F $y = 15 + 6x$

G $y = 10.50 + 27x$

H $y = 90x$

J $y = 37.50x$

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS ON YOUR ANSWER DOCUMENT

STOP