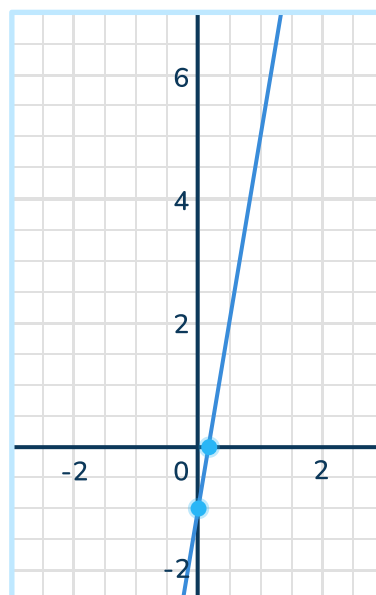# Graphing Linear Equations Worksheet

Algebra

Grades 6 to 8

Skill Questions

Name: ....

Date: ....

1 Circle the graph that represents the equation $y = -6x + 1$
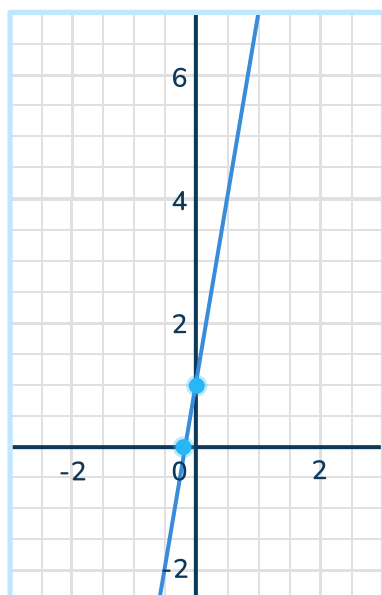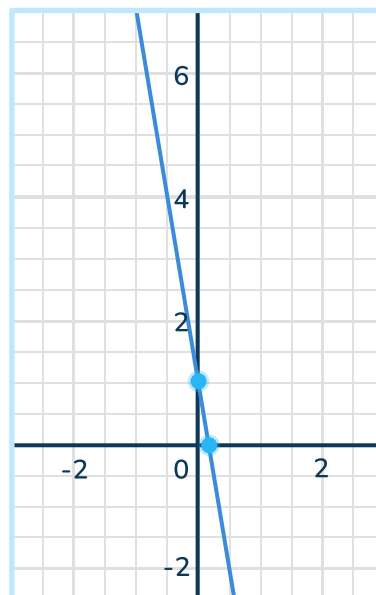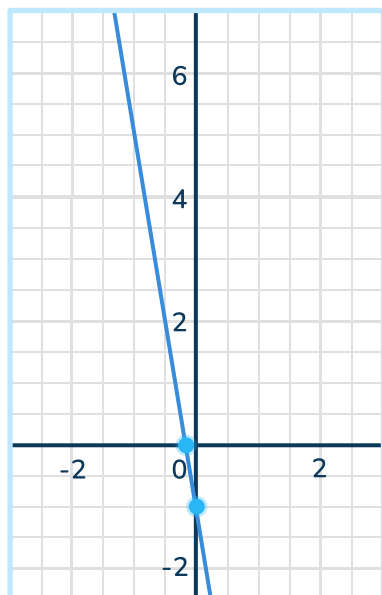
2 Select the equation that represents the graph.
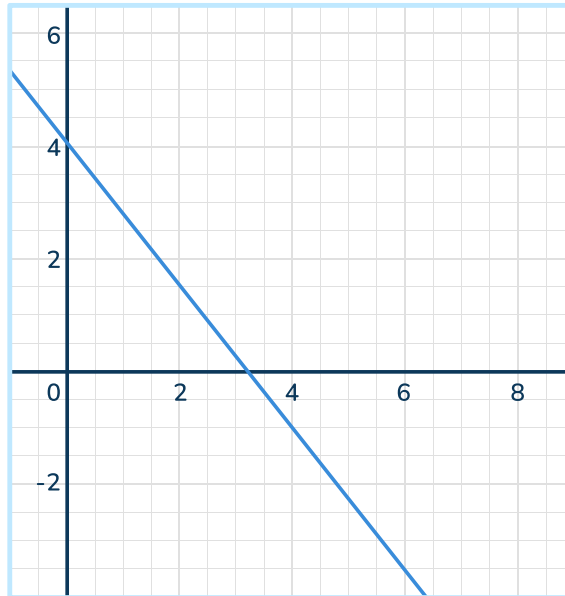
A. $y = -\dfrac{4}{5}x + 4$

B. $y = \dfrac{4}{5}x + 4$

C. $y = \dfrac{5}{4}x + 4$

D. $y = -\dfrac{5}{4}x + 4$

Answer

---

3 Select the equation that represents the graph.

A. $y = 3x$

B. $y = -3$

C. $x = -3$
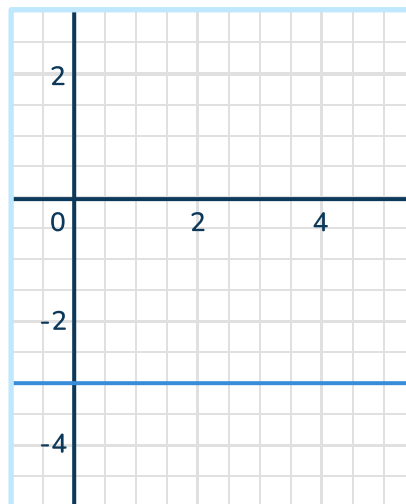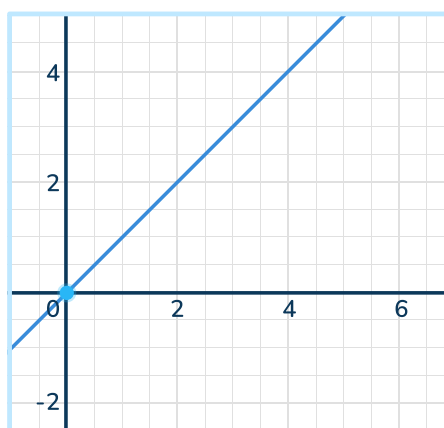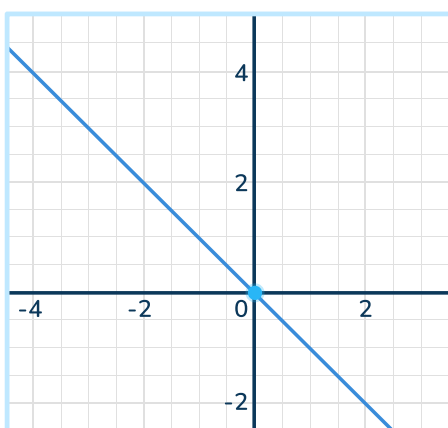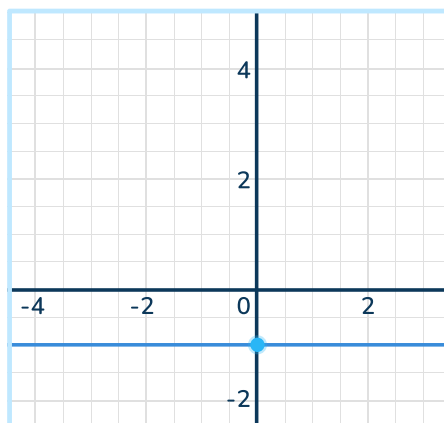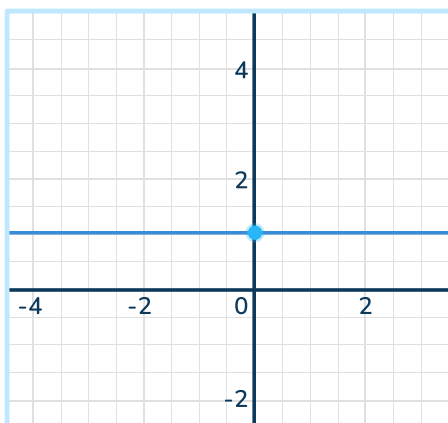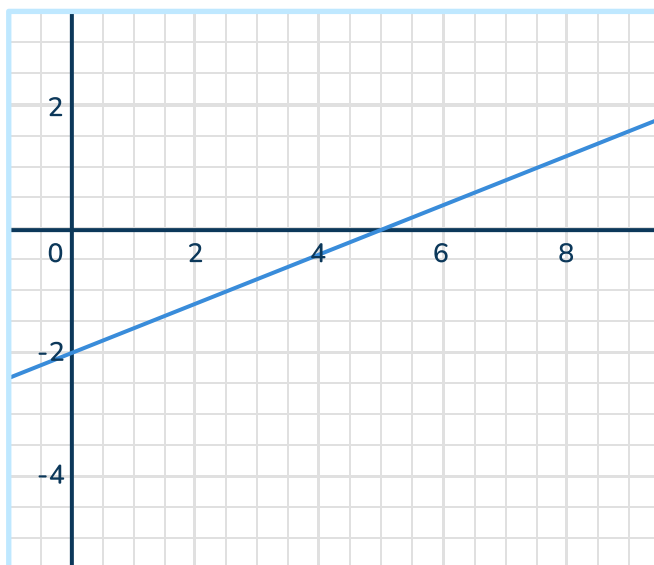
D. $y = 3$

Answer

Graphing Linear Equations Worksheet | Grades 6 to 8

4 Circle the graph that represents the equation, $y = -x$

5 Determine the slope and the y-intercept of the graph below.

Answer

6 Write the equation of the line represented by the graph below.
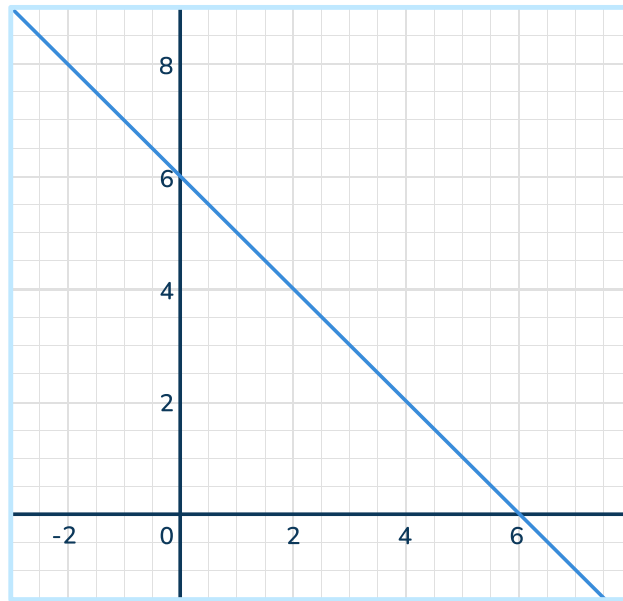
Answer

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7 Graph the equation $4x + 2y = -16$

Answer

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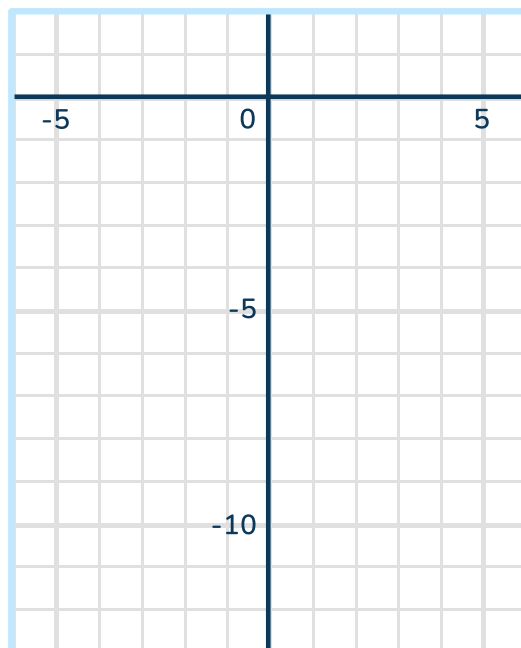
8 Graph the equation $x + y - 1 = 5$
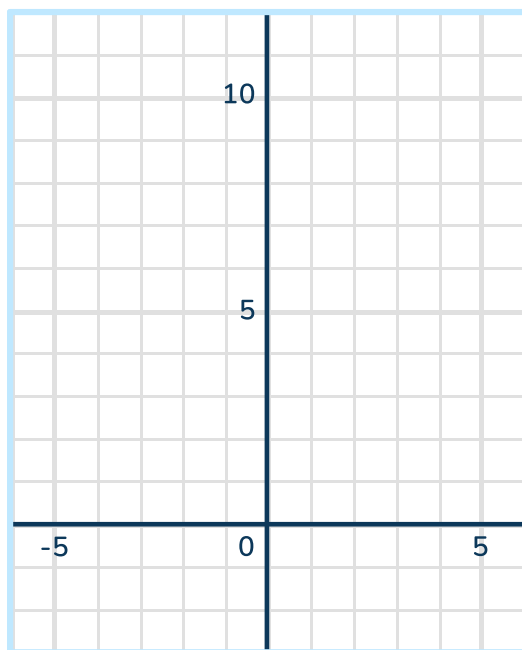
Answer

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9 Graph the equation $y - 3x + 9 = -3$
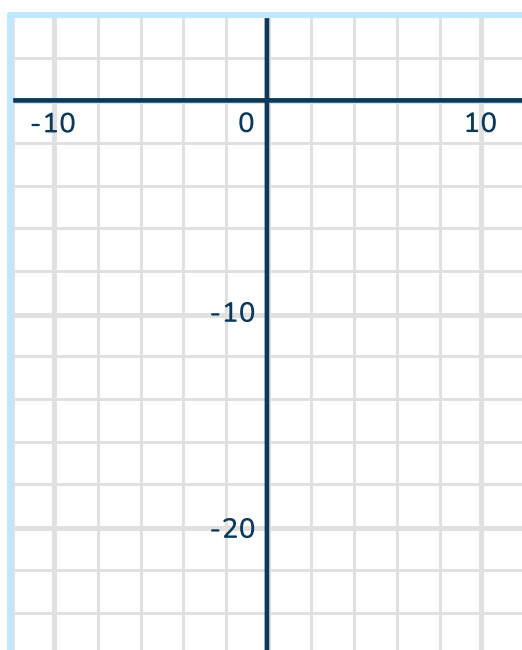
Answer

Graphing Linear Equations Worksheet | Grades 6 to 8

10 Graph the equation $\dfrac{1}{3}x - \dfrac{1}{6}y = 0$
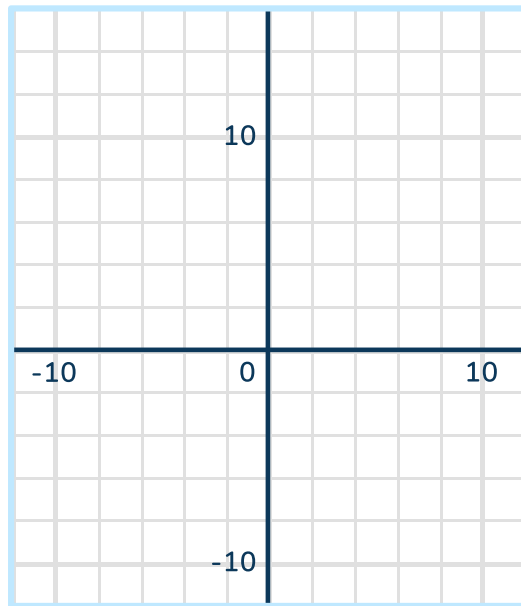
Answer

Applied Questions

11   Look at graph below. Describe the rate of change.
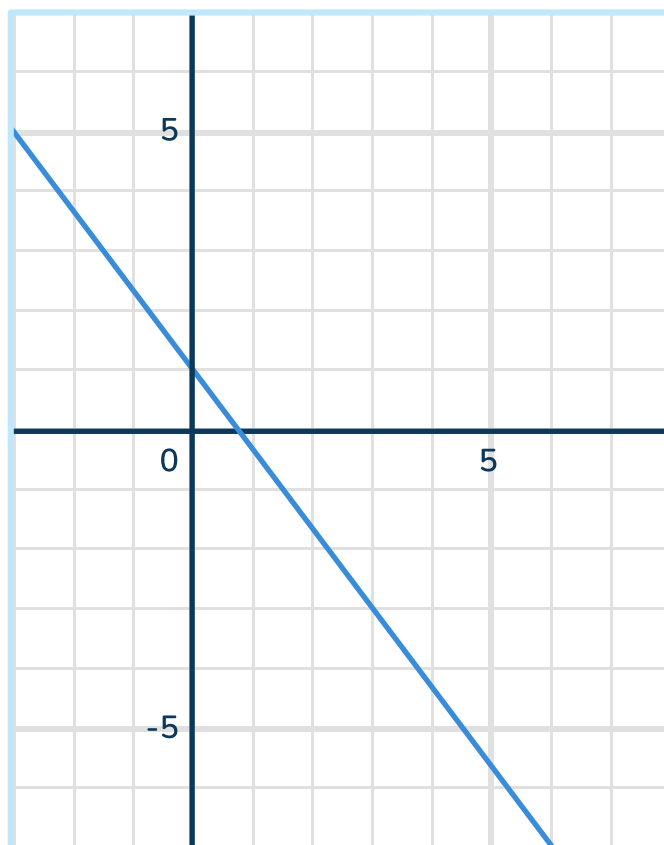
Answer

12 Lena and Kevin are in math class. They have to graph the equation $5x - 6y = -6$. Below are their graphs, who sketched it correctly and explain why.
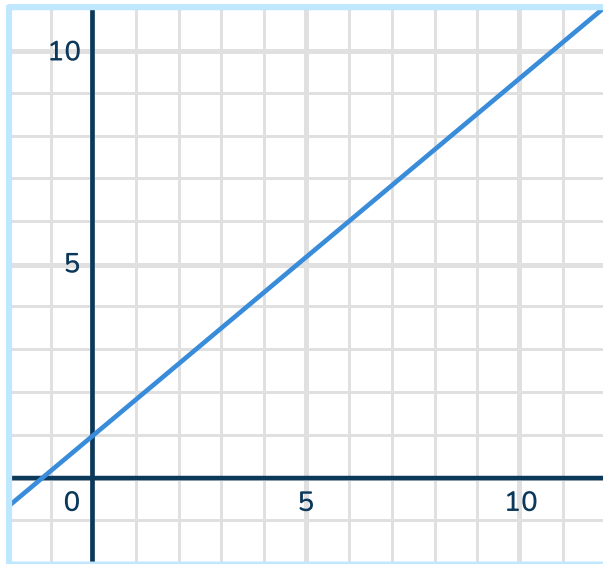
Lena	Kevin
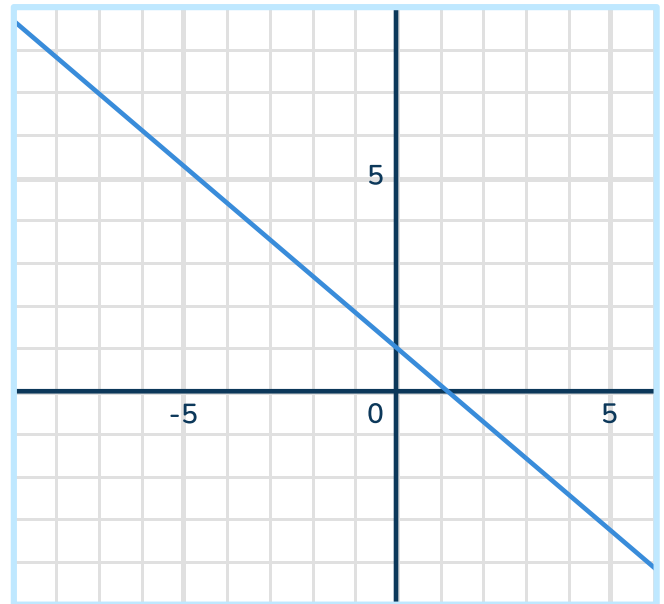
Answer

13 Compare and contrast the graphs of $x = 1$ and $y = 1$.

14 Use the equation below to answer the questions.

$$4y - 8x + 9 = 1$$

A. Put the equation in $y = mx + b$ form.

B. Identify the rate of change.

C. Identify the y-intercept.

D. Sketch the equation.

---

15 Which linear equation has a greater rate of change and why?
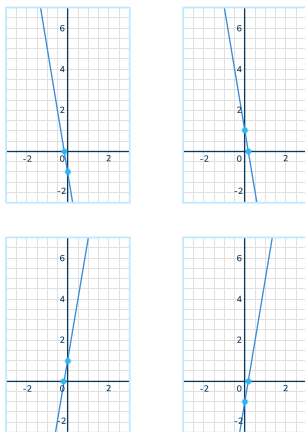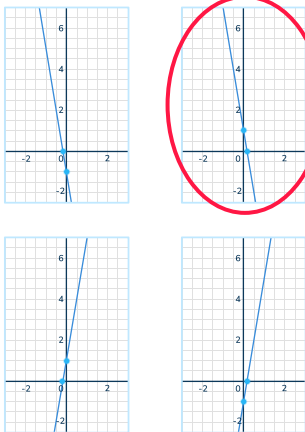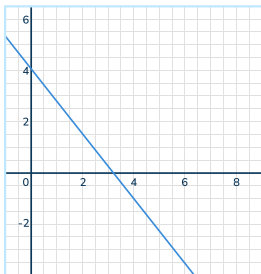
Equation A:
$2x - 8y = 9$
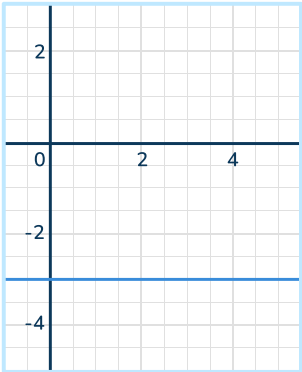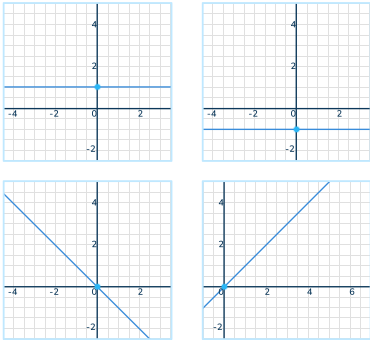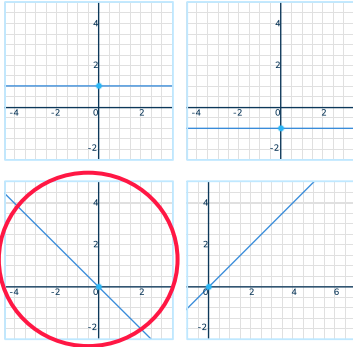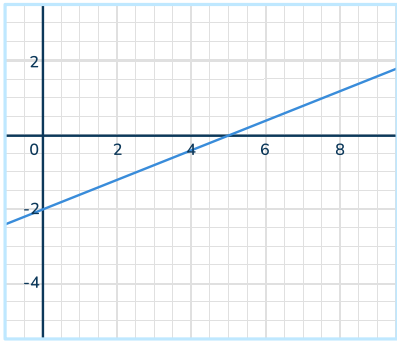
Equation B:
$3x - 9y - 1 = 11$

Answer
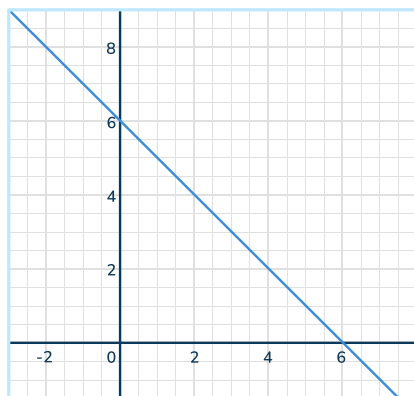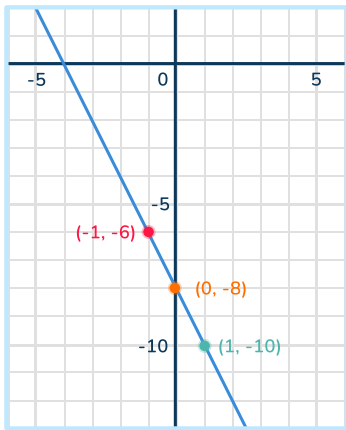
Answers

Question number	Question	Answers	Standard
1	Circle the graph that represents the equation $y = -6x + 1$		8.EE.B.5 8.F.A.3 HSF-IF.C.7a
2	Select the equation that represents the graph. A) $y = -\dfrac{4}{5}x + 4$ B) $y = \dfrac{4}{5}x + 4$ C) $y = \dfrac{5}{4}x + 4$ D) $y = -\dfrac{5}{4}x + 4$	D	8.EE.B.5 8.F.A.3 HSF-IF.C.7a
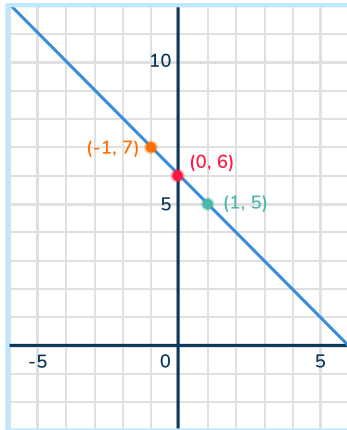
Graphing Linear Equations Worksheet | Grades 6 to 8 | Answers
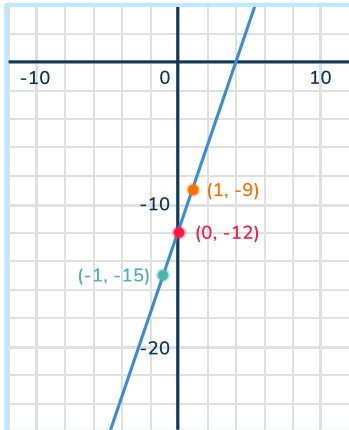
Question number	Question	Answers	Standard
3	Select the equation that represents the graph. A) $y = 3x$ B) $y = -3$ C) $x = -3$ D) $y = 3$	B	8.EE.B.5 8.F.A.3 HSF-IF.C.7a
4	Circle the graph that represents the equation, $y = -x$ 		8.EE.B.5 8.F.A.3 HSF-IF.C.7a
5	Determine the slope and the y-intercept of the graph below. 	Slope = $\dfrac{2}{5}$ y-intercept = -2	8.F.A.3 HSF-IF.C.7a

Graphing Linear Equations Worksheet | Grades 6 to 8 | Answers
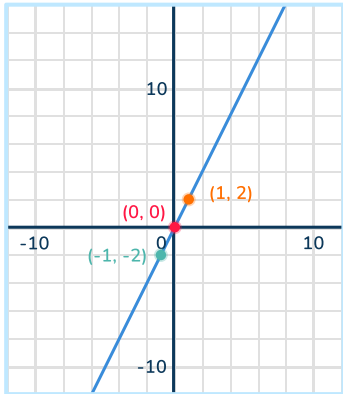
Question number	Question	Answers	Standard
6	Write the equation of the line represented by the graph below.	$y = -x + 6$	8.EE.B.5 8.F.A.3 HSF-IF.C.7a
7	Graph the equation $4x + 2y = -16$	You can graph the equation by using a table of values or using slope intercept. Put the equation in $y = mx + b$ form. $4x + 2y = -16$ $2y = -4x - 16$ $y = -2x - 8$ 	8.EE.B.5 8.F.A.3 HSF-IF.C.7a

x	y
0	-8
1	-10
-1	-6

Question number	Question	Answers	Standard
8	Graph the equation $x = y - 1 = 5$	You can graph the equation using a table of values or slope intercept. Put the equation in $y = mx + b$ form. $x + y - 1 = 5$ $y = -x + 6$	8.EE.B.5 8.F.A.3 HSF-IF.C.7a

Table:

x	y
0	6
1	5
-1	7

Graphing Linear Equations Worksheet | Grades 6 to 8 | Answers
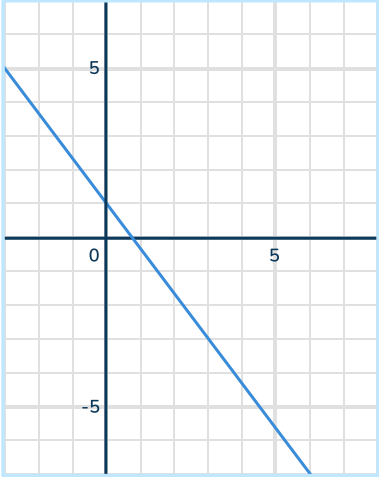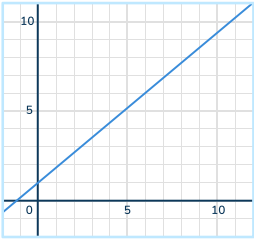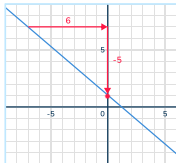
Question number	Question	Answers	Standard
9	Graph the equation $y - 3x + 9 = -3$	You can graph the equation by using a table of values or using slope intercept. Put the equation in $y = mx + b$ form. $$y - 3x + 9 = -3$$ $$y = 3x - 12$$ <table><tr><th>x</th><th>y</th></tr><tr><td>0</td><td>-12</td></tr><tr><td>1</td><td>-9</td></tr><tr><td>-1</td><td>-15</td></tr></table> 	8.EE.B.5 8.F.A.3 HSF-IF.C.7a

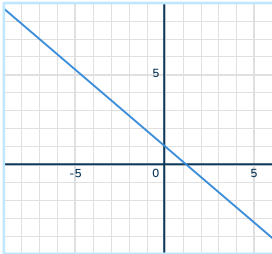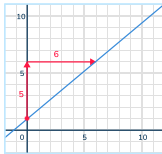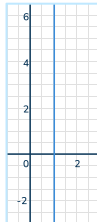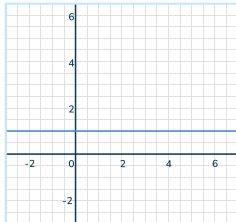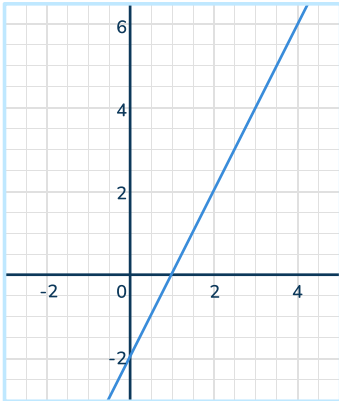| Question number	Question	Answers	Standard
10	Graph the equation $\frac{1}{3}x - \frac{1}{6}y = 0$	You can graph the equation using a table of values or slope intercept. Put the equation in $y = mx + b$ form. $\frac{1}{3}x - \frac{1}{6}y = 0$ $-\frac{1}{6}y = -\frac{1}{3}x$ $y = 2x$ <table><tr><th>x</th><th>y</th></tr><tr><td>0</td><td>0</td></tr><tr><td>1</td><td>2</td></tr><tr><td>-1</td><td>-2</td></tr></table> 	8.EE.B.5 8.F.A.3 HSF-IF.C.7a

Question number	Question	Answers	Standard
11	Look at graph below. Describe the rate of change. 	The rate of change is $-\dfrac{4}{3}$	8.EE.B.5 8.F.A.3 HSF-IF.C.7a
12	Lena and Kevin are in math class. They have to graph the equation $5x - 6y = -6$. Below are their graphs, who sketched it correctly and explain why. Lena Kevin 	Lena has sketched the equation correctly. If you put the equation in $y = mx + b$ form you get the equation, $5x - 6y = -6$ $-6y = -5x - 6$ $y = \dfrac{5}{6}x + 1$, the slope or rate of change is positive $\dfrac{5}{6}$ and the y-intercept is 1 so Lena is correct. Lena Kevin 	8.F.A.3 HSF-IF.C.7a

Graphing Linear Equations Worksheet | Grades 6 to 8 | Answers

Question number	Question	Answers	Standard
13	Compare and contrast the graphs of $x = 1$ and $y = 1$.	The graphs of $x = 1$ and $y = 1$ are both linear equations so when they are sketched on the coordinate plane they both form lines. $x = 1$ represents a vertical line and $y = 1$ represents a horizontal line.	8.F.A.3 HSF-IF.C.7a
14	Use the equation below to answer the questions. $4y - 8x + 9 = 1$ A) Put the equation in $y = mx + b$ form. B) Identify the rate of change. C) Identify the y-intercept. D) Sketch the equation.	A) $4y - 8x + 9 = 1$ $4y = 8x - 8$ $y = 2x - 2$ B) Rate of change = 2 C) y-intercept = -2 D)	8.F.A.3 HSF-IF.C.7a

Question number	Question	Answers	Standard
15	Which linear equation has a greater rate of change and why? **Equation A:** $2x - 8y = 9$ **Equation B:** $3x - 9y - 1 = 11$	First, rewrite the equations in slope intercept form. $2x - 8y = 9$ $-8y = -2x + 9$ $y = \dfrac{1}{4}x - \dfrac{9}{8}$ Rate of change = $\dfrac{1}{4}$ $3x - 9y - 1 = 11$ $-9y = -3x + 12$ $y = \dfrac{1}{3}x - \dfrac{12}{9}$ Rate of change = $\dfrac{1}{3}$ **Equation B** has a greater rate of change because the slope is $\dfrac{1}{3}$ which is greater than $\dfrac{1}{4}$.	8.EE.B.6 8.F.A.3 HSF-IF.C.7a

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