THIRD SPACE LEARNING

Direct Variation Worksheet

Ratio and Proportion

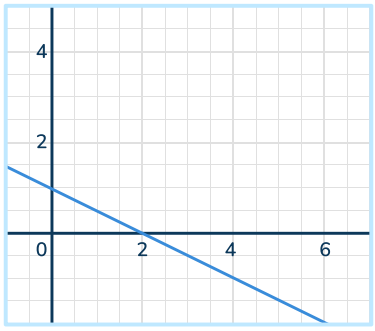
Grades 6 to 8

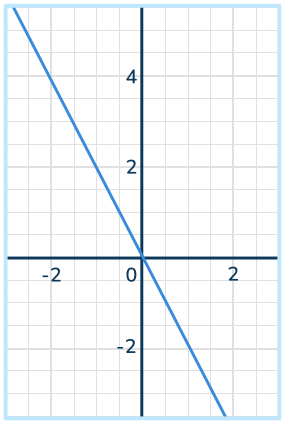
Skill Questions

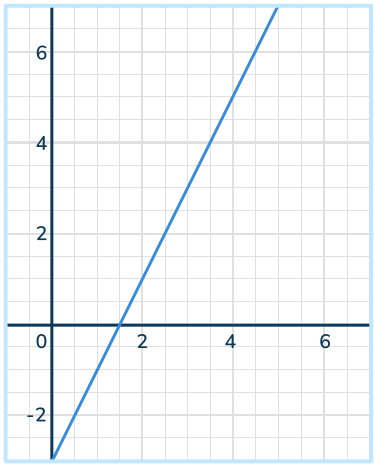
Name: .....

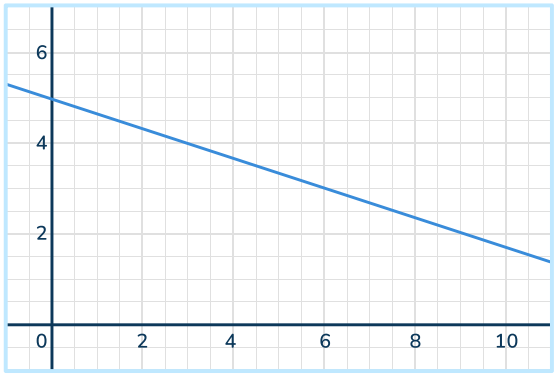
Date: .....

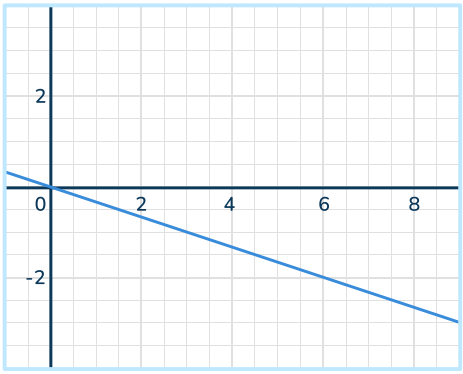
1 Circle the graphs that represent direct variation.











2 Select the equations that represent direct variation.

A. $y = 2x - 3$

B. $y = 3x$

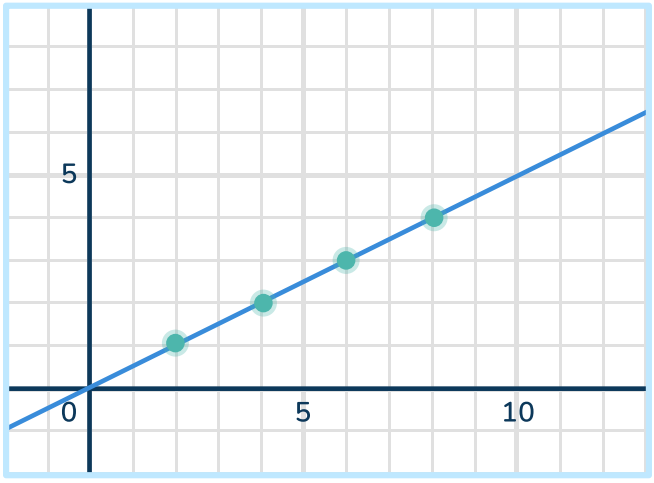
C. $y = \frac{1}{5}x$

D. $y = \frac{1}{2}x + 4$

E. $y = -5x + 3$

Answer

3 What is the constant of direct variation for the graph below?

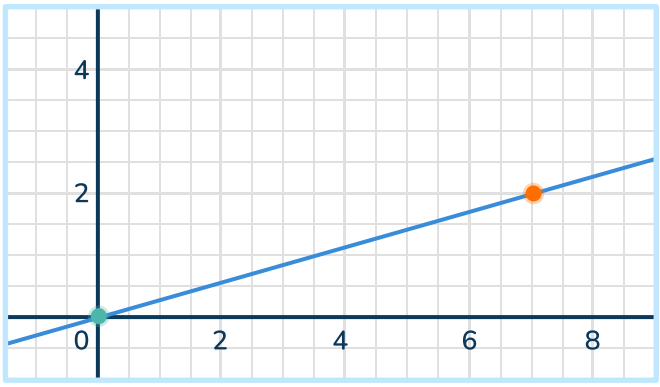


Answer

4 If x and y vary directly, find the constant of direct variation that contains the point (4, 16).

Answer

5 Find the constant rate of change of the direct variation graph.



Answer

6 If x and y vary directly, find the equation of direct variation that contains the point (-4, 20).

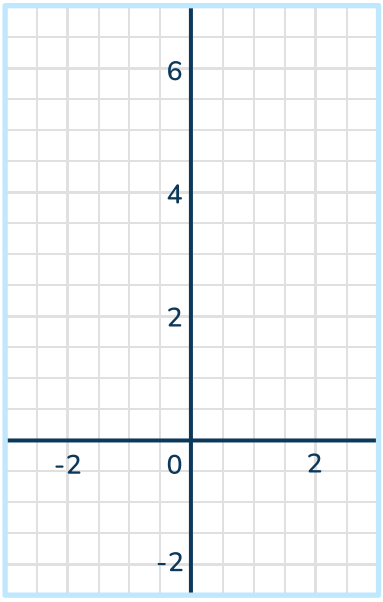
Answer

7 If x and y vary directly, find the equation of direct variation that contains the point (-6, 5).

Answer

8 Graph the direct variation equation and determine the constant of variation.

$$y = -3x$$



Answer

9 If x and y vary directly, find the equation of direct variation that contains the point (-8, 2).

Answer

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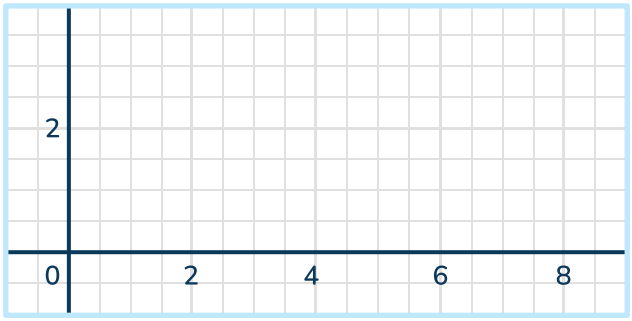
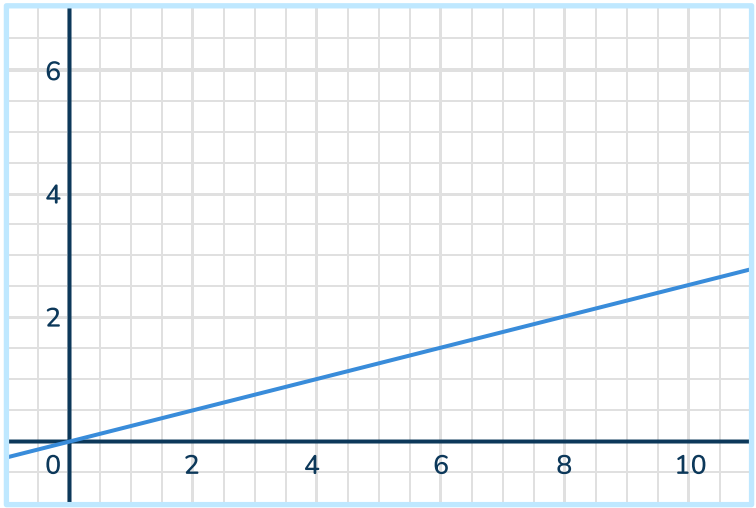
10 If x and y vary directly, find the equation of direct variation that contains the point (-7, -3) and then graph it.



Answer

Applied Questions

11 Look at the graph below. Describe the constant of variation.



Answer

12 Create two linear equations in the form of $y = mx + b$ where one represents a direct variation and the second one does not.

Answer

13 x and y vary directly and $x = 9$ and $y = -2$

A) Write the equation that represents the direct variation

B) Find x when $y = 4$

Answer

14 The perimeter of an equilateral triangle is directly proportional to the side of the triangle. If the perimeter of the equilateral triangle is 63 inches for a side length of 21 inches, what is the perimeter of the equilateral triangle if the side of the triangle is tripled?

Answer

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15 Use the equation below to answer the questions.

$$3x - 2y = 0$$

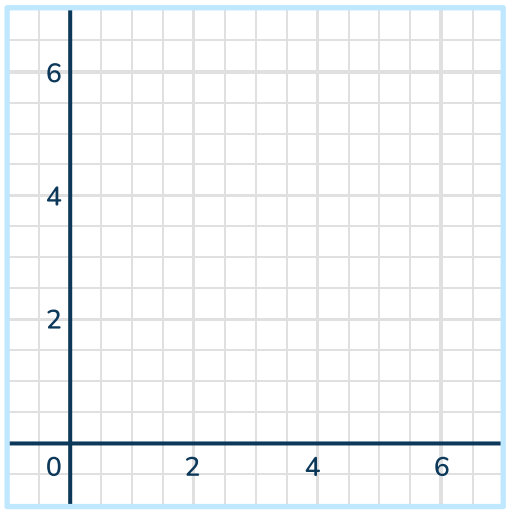
A) Does the equation represent direct variation?

Answer

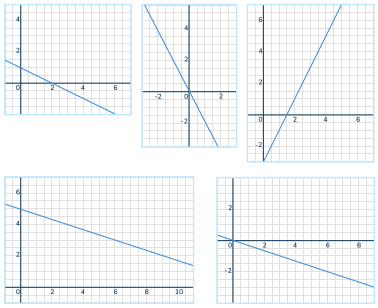
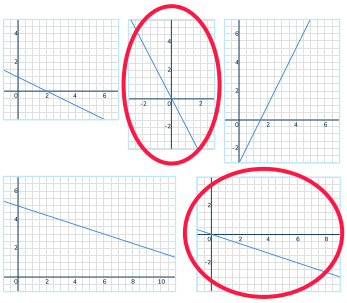
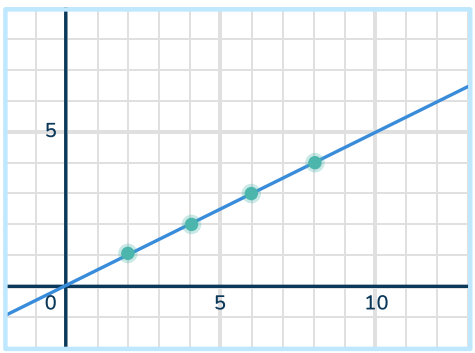
B) If so, what is the constant of variation?

Answer

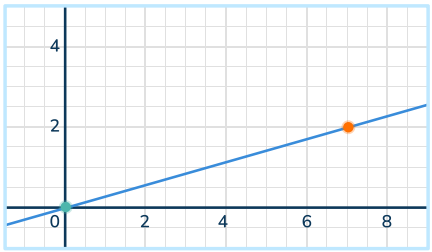
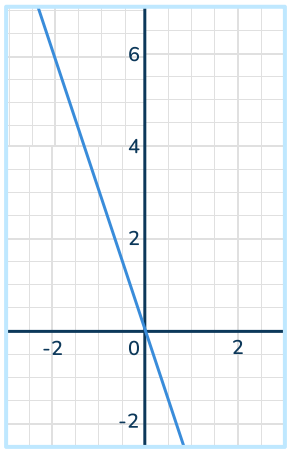
C) Graph the equation.



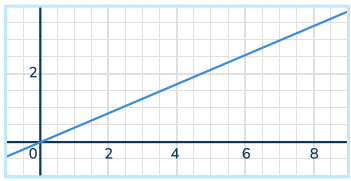
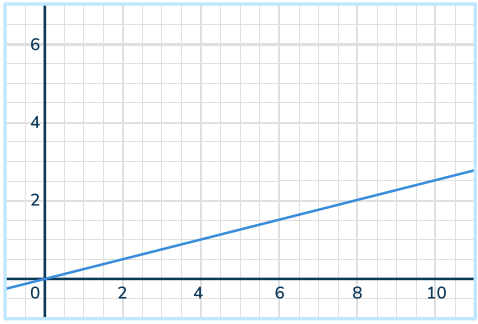
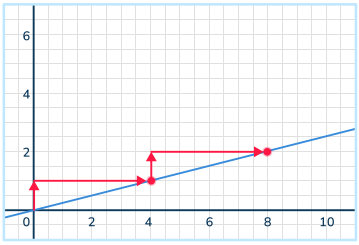
Answers

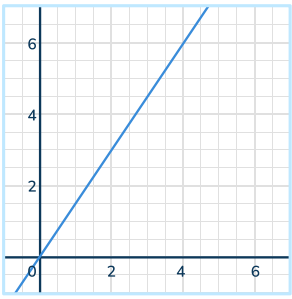
Question number	Question	Answers	Standard
1	Circle the graphs that represent direct variation. 		7.RP.A.2.b 8.EE.B.5
2	Select the equations that represent direct variation. A) $y = 2x - 3$ B) $y = 3x$ C) $y = \frac{1}{5}x$ D) $y = \frac{1}{2}x + 4$ E) $y = -5x + 3$	B, C	7.RP.A.2.b 8.EE.B.5
3	What is the constant of direct variation for the graph below? 	The constant of variation is $\frac{1}{2}$	7.RP.A.2.b

Direct Variation Worksheet | Grades 6 to 8 | Answers

Question number	Question	Answers	Standard
4	If x and y vary directly, find the constant of direct variation that contains the point (4, 16).	The constant of variation is 4.	7.RP.A.2.b
5	Find the constant rate of change of the direct variation graph. 	The constant rate of change is $\frac{2}{7}$	7.RP.A.2.b 8.EE.B.5
6	If x and y vary directly, find the equation of direct variation that contains the point (-4, 20).	$y = -5x$	8.EE.B.5
7	If x and y vary directly, find the equation of direct variation that contains the point (-6, 5).	$y = -\frac{5}{6}x$	8.EE.B.5
8	Graph the direct variation equation and determine the constant of variation. $y = -3x$	The graph:  The constant of variation is -3.	8.EE.B.5

Direct Variation Worksheet | Grades 6 to 8 | Answers

Question number	Question	Answers	Standard
9	If x and y vary directly, find the equation of direct variation that contains the point (-8, 2).	$y = -\frac{1}{4}x$	8.EE.B.5
10	If x and y vary directly, find the equation of direct variation that contains the point (-7, -3) and then graph it.	$y = \frac{3}{7}x$ 	8.EE.B.5
11	Look at the graph below. Describe the constant of variation. 	The constant of variation in this graph is $\frac{1}{4}$ because the constant of variation is the rate of change. 	7.RP.A.2.b 8.EE.B.5
12	Create two linear equations in the form of $y = mx + b$ where one represents a direct variation and the second one does not.	Answers may vary: Direct variation: $y = \frac{3}{4}x$ Not a direct variation: $y = \frac{3}{4}x + 4$	8.EE.B.5
13	x and y vary directly and $x = 9$ and $y = -2$ A) Write the equation that represents the direct variation B) Find x when $y = 4$	A) $y = -\frac{2}{9}x$ B) $x = -18$	8.EE.B.5

Question number	Question	Answers	Standard
14	The perimeter of an equilateral triangle is directly proportional to the side of the triangle. If the perimeter of the equilateral triangle is 63 inches for a side length of 21 inches, what is the perimeter of the equilateral triangle if the side of the triangle is tripled?	Perimeter = 189 inches	8.EE.B.5
15	Use the equation below to answer the questions. $3x - 2y = 0$ A) Does the equation represent direct variation? B) If so, what is the constant of variation? C) Graph the equation.	A) Yes it represents a direct variation because it can be rewritten in the form of $y = kx$ $3x - 2y = 0$ $-2y = -3x$ $y = \frac{3}{2}x$ B) The constant of variation is $\frac{3}{2}$ C) 	8.EE.B.5

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