

Ch. 7 - Linear Equations and Graphs

FPC 10

Name _____

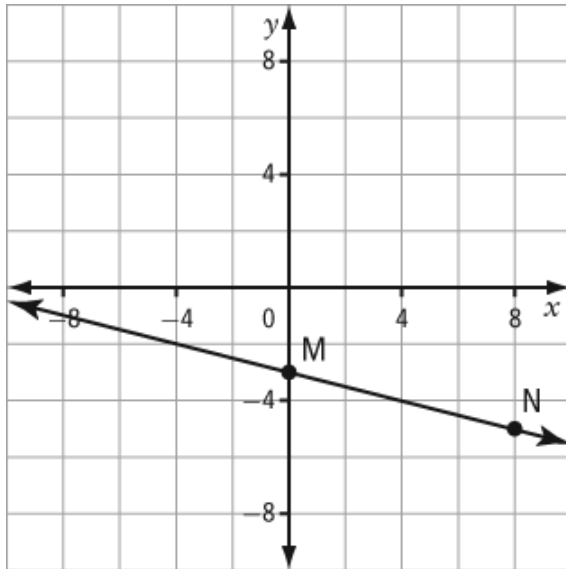
Mark _____

Multiple Choice

Identify the choice that best completes the statement or answers the question.

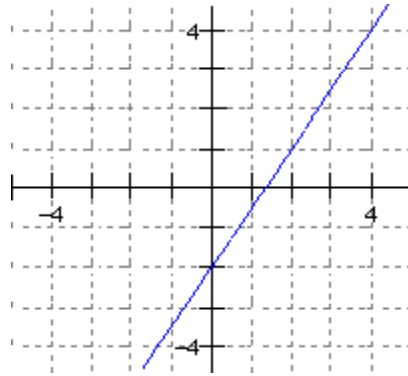
- Which letter represents the slope in the equation of a line, $y = mx + b$?
 - b
 - m
 - x
 - y
- What is the y -intercept of the line $y = -\frac{2}{3}x$?
 - $-\frac{2}{3}$
 - 0
 - 1
 - $\frac{3}{2}$
- Rewrite the equation $y = -2x + 5$ in general form.
 - $-2x + y - 5 = 0$
 - $-2x - y - 5 = 0$
 - $2x - y + 5 = 0$
 - $2x + y - 5 = 0$
- What is the slope of the line passing through points (x, y) and (p, q) ?
 - $\frac{p-x}{q-y}$
 - $\frac{q-y}{p-x}$
 - $\frac{q-p}{y-x}$
 - $\frac{x-y}{q-p}$
- For the line $3x - 4y - 12 = 0$, which statement is true?
 - The x -intercept is 3 and the y -intercept is 4.
 - The x -intercept is 3 and the y -intercept is -4 .
 - The x -intercept is 4 and the y -intercept is 3.
 - The x -intercept is 4 and the y -intercept is -3 .
- What is the equation $8x - 4y - 12 = 0$ in slope-intercept form?
 - $y = -2x - 3$
 - $y = -2x + 3$
 - $y = 2x - 3$
 - $y = 2x + 3$
- Identify the slope and y -intercept of the relation represented by the equation $2x - 2y + 3 = 0$.
 - slope: 1, y -intercept: $\frac{3}{2}$
 - slope: 1, y -intercept: $-\frac{3}{2}$
 - slope: -1 , y -intercept: $\frac{3}{2}$
 - slope: -1 , y -intercept: $-\frac{3}{2}$
- What is the slope of the line with an x -intercept of 4 and a y -intercept of -3 ?
 - $-\frac{4}{3}$
 - $-\frac{3}{4}$
 - $\frac{3}{4}$
 - $\frac{4}{3}$

9. Which equation represents the line containing points M and N?



- a. $y = -4x - 3$
- b. $y = -\frac{1}{4}x - 3$
- c. $y = \frac{1}{4}x - 3$
- d. $y = 4x - 3$
10. What is the slope of the line with an x -intercept of 4 and a y -intercept of -3 ?
- a. $-\frac{4}{3}$
- b. $-\frac{3}{4}$
- c. $\frac{3}{4}$
- d. $\frac{4}{3}$
11. Which of the following equations represents a line with slope 0.5 and y -intercept -0.25 ?
- a. $2x - 4y - 1 = 0$
- b. $2x - 4y + 1 = 0$
- c. $2x + 4y - 1 = 0$
- d. $2x + 4y + 1 = 0$
12. Identify the slope of the line through points $(3, 4)$ and $(-4, -5)$.
- a. $-\frac{9}{7}$
- b. -1
- c. 0
- d. $\frac{9}{7}$
13. What is the value of p such that the line passing through $(6, 2)$ and $(9, p)$ has a slope of -1 ?
- a. -3
- b. -1
- c. 1
- d. 3

18.



Which of the following equations best describes the graph shown above?

I $y = \frac{3}{2}x - 2$

II $y - 1 = \frac{3}{2}(x - 2)$

III $3x + 2y - 2 = 0$

- a. I only
- b. I and II only

- c. III only
- d. II only

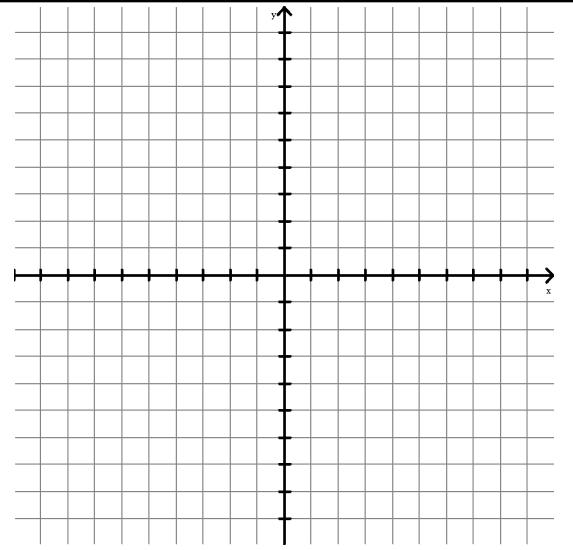
Completion

Complete each statement.

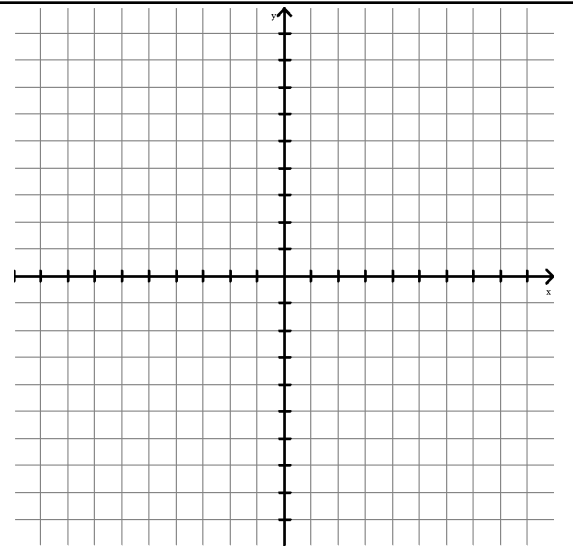
1. In the equation of a line, $y = 4x - 3$, the number -3 represents the _____.
2. The x -intercept occurs when _____.
3. The slope of the line represented by $y - 2 = \frac{-3}{4}(x + 5)$ is _____.
4. The slope of a horizontal line is _____.
5. The equation of a line is $y = \frac{2}{3}x + 2$. A parallel line would have a slope of _____.
6. The equation of a line is $y = 3x - \frac{5}{2}$. The slope of a perpendicular line would be _____.
7. A line goes through $(3,4)$ and $(3,-2)$. The equation of the line is _____.
8. For a vertical line, the run is _____.

Written Response – Show all necessary works.

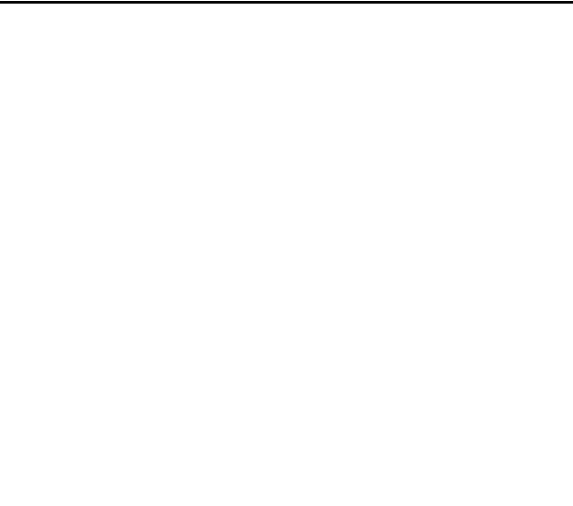
1. Determine the x -intercept and y -intercept of the line $y = 1 - x$. Then, graph the line. (2 marks)



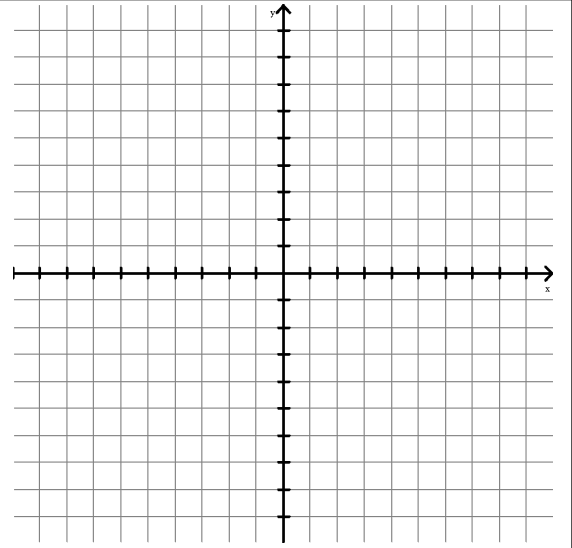
2. What is an equation for the line that passes through points $(-1, -2)$ and $(3, 4)$? Write your answer in slope-point form. (1 mark)



3. Points $A(0, 12)$ and $B(4, -4)$ are on a line.
- a) Plot points A and B on a graph and draw the line that passes through them. (1 mark)
- b) Determine the slope and y -intercept of the line. (1 mark)
- c) Write the equation of the line. (1 mark)



d) Write an equation of another line, with a y -intercept of 8, that is parallel to the line you drew in part a). (1 mark)



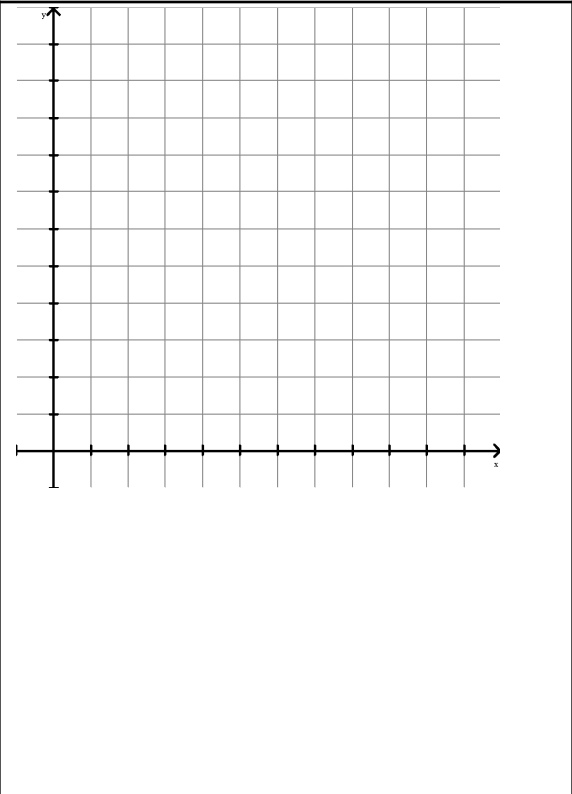
4. For safety reasons, scuba divers need to be aware of the pressure as they dive. At a depth of 4 m, the pressure is 140 kPa (kilopascals). At 9 m, it is 190 kPa.

a) Plot the coordinates (d, p) on a grid, where d is depth, in metres, and p is pressure, in kilopascals. Draw a line through the points. (1 mark)

b) Determine an equation for the line in the form $p = md + b$. (1 mark)

c) Identify what the slope and the p -intercept represent. (1 mark)

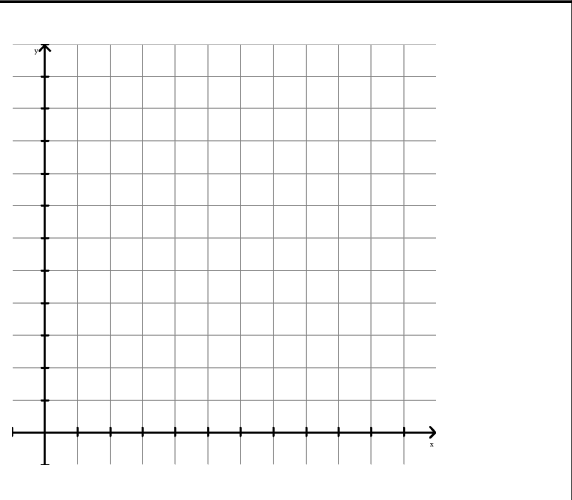
d) At what depth is the pressure double that at the surface? (1 mark)



5. Autoking Service Centre charges for a car service according to the equation $80h - C + 50 = 0$, where C is the total service cost, in dollars, for an automobile service and h is the time, in hours, that the job takes.

a) Rewrite the equation in the form $C = mh + b$. (1 mark)

b) Identify the slope and the C -intercept and explain what they mean. (1 mark)



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6. The vertices of quadrilateral ABCD are $A(0, 5)$, $B(9, 2)$, $C(7, -4)$, and $D(-2, -1)$. Is ABCD a rectangle? Explain your method. (2 marks)

