Practice Problems for X-Y Coordinates and Graphs

from www.topmath.info

1 What is the slope of the line y = -1x + 9 ?

2 What is the slope of the perpendicular bisector of the line segment between (5,-8) and (2,-11) ?

3 At what point does the line that contains (3,4) and has slope -1 pass through the Y axis?

4 The function f(x) is linear. When x=6, f(x) = 31, and when x=10, f(x) = 59. Write the equation that defines f(x).

5 What point is 11 units above (0,0)?

Please e-mail comments and suggestions to: **edu@ezlink.com**

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6 What point is 1 units to the right of (6,7)?

7 The points (19,5), (28,9), and (19,9) are three corners of a rectangle. What is the fourth point?

8 What point is 10 units above (-16,-19)?

9 What point is 8 units to the right of (-20,-14)?

10 What is the slope of the line y = x?

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11 What is the slope of the line y = 4x ?

12 What is the slope of the line whose equation is 9x + y = 5?

13 What is the slope of the line y = -7x ?

14 What is the slope of the line y = 8x + 0 ?

15 What is the slope of the line y = -7x - 9 ?

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1 ANSWER: -1

2 ANSWER: -1. EXPLANATION: The slope of the line segments between the given points is (-11 - -8) / (2 - 5). The slope of any line perpendicular to this line segment is the negative reciprocal of this slope.

3 ANSWER: (0,7). EXPLANATION: The equation $y = mx + b$ is the same as $b = y - mx$. Plugging in the coordinates of the point and the slope (m), we calculate b, the y-intercept, as $b = 4 - (-1 * 3)$, which simplifies to 7. The x-coordinate of the y-intercept, of course, is 0, so the point is (0,7).

4 ANSWER: $f(x) = 7x - 11$. EXPLANATION: When x goes from 6 to 10, (a change of 4), f(x) changes by 28. Dividing the change in f(x) by the change in x, we get the slope, which is 7. The equation of the line is therefore of the form $f(x) = 7x + k$. We can now plug in either pair of known values for x and f(x) to solve for k.

5 ANSWER: (0,11)

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6 ANSWER: (7,7)

7 ANSWER: (28,5). EXPLANATION: Since one X value appears twice, and one Y value appears twice, the fourth point must be the one that would make the other X and Y values appear twice in the completed list of points.

8 ANSWER: (-16,-9)

9 ANSWER: (-12,-14)

10 ANSWER: 1

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11 ANSWER: 4

12 ANSWER: -9. EXPLANATION: Subtract 9x from each side to make the equation read y = -9x + 5. This is now in the form y = mx + b, where m (-9) is the slope.

13 ANSWER: -7

14 ANSWER: 8

15 ANSWER: -7