

Practice Problems for X-Y Coordinates and Graphs
from www.topmath.info

1 A line going through $(3,-5)$ has a slope of -3 . What is the Y intercept of the line?

2 What is the equation of the line whose X intercept is $(-9,0)$ and whose Y intercept is $(0,4)$?

3 What point is 3 units below $(7,10)$?

4 What point is 2 units to the left of $(5,7)$?

5 The points $(-21,-15)$, $(-11,-15)$, and $(-21,-18)$ are three corners of a rectangle. What is the fourth point?

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6 What point is 1 units below $(-20,-11)$?

7 What point is 9 units to the left of $(-6,1)$?

8 What is the slope of the line $x = -y$?

9 What is the slope of the line $y = x/2$?

10 What is the slope of the line whose equation is $4x - y = 8$?

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11 What is the slope of the line $y = x/3$?

12 What is the slope of the line $y = x/10 + 14$?

13 What is the slope of the line $y = x/2 + 17$?

14 What are the coordinates of the point at which the line that contains $(-3,-4)$ and $(1,-7)$ passes through the Y axis?

15 A line going through $(5,9)$ has a slope of -3 . What is the Y intercept of the line?

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1 ANSWER: (0,4). EXPLANATION: The Y axis is 3 units to the left of point (3,-5). Because it is to the left, we multiply 3 by the negative of the slope (3) to see that the line moves by 9 units in the Y direction from the given point to the Y intercept. Add this to the Y coordinate of (3,-5) to get the Y coordinate of the Y intercept.

2 ANSWER: $Y = 4X/9 + 4$. EXPLANATION: In going from the X intercept to the Y intercept, the line changes by 4 in the Y direction, and by 9 in the X direction. The slope is therefore $4/9$, and the Y intercept is given as 4.

3 ANSWER: (7,7)

4 ANSWER: (3,7)

5 ANSWER: (-11,-18). 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.

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6 ANSWER: (-20,-12)

7 ANSWER: (-15,1)

8 ANSWER: -1

9 ANSWER: $\frac{1}{2}$

10 ANSWER: 4. EXPLANATION: Subtract $4x$ from each side to make the equation read $-y = -4x + 8$. Now multiply both sides by -1 , and the equation reads $y = 4x - 8$. This is now in the form $y = mx + b$, where m (4) is the slope.

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11 ANSWER: $-1/3$

12 ANSWER: $1/10$

13 ANSWER: $-1/2$

14 ANSWER: $(0, -6 \frac{1}{4})$. EXPLANATION: The X-coordinate of the Y-intercept will be 0, by definition. The slope of the line is the change in Y divided by the change in X, in this case, $(-7 - -4) / (1 - -3)$, which equals -0.75 . Going from the first point, $(-3, -4)$, to the Y axis requires a move of 3 units in the X direction. Multiplying this value by the slope, we see that we must move by -2.25 units in the Y direction from $(-3, -4)$, which means the line intersects the Y axis at $(0, -6 \frac{1}{4})$.

15 ANSWER: $(0, 24)$. EXPLANATION: The Y axis is 5 units to the left of point $(5, 9)$. Because it is to the left, we multiply 5 by the negative of the slope (3) to see that the line moves by 15 units in the Y direction from the given point to the Y intercept. Add this to the Y coordinate of $(5, 9)$ to get the Y coordinate of the Y intercept.