**DEFINITION: The y-intercept is the point on the y-axis where your line crosses or meets the y-axis. It is also the coordinate that has an x-value of ZERO. (0, y)**



For each line on the grid to the right, state the COORDINATE of the y-intercept. Line A is done for you.

1. ( 0 , 5 )
2. ( , )
3. ( , )
4. ( , )
5. ( , )

What do all these points have in common?

**DEFINITION: The x-intercept is the point on the x-axis where your line crosses or meets the x-axis. It is also the coordinate that has a y-value of ZERO. (x, 0)**



For each line on the grid to the right, state the COORDINATE of the x-intercept. Line A is done for you. \*

1. ( 2 , 0 )
2. ( , )
3. ( , )
4. ( , )
5. ( , )

What do all these points have in common?

**Lesson: Graphing with x-Intercepts and y-Intercepts**

* Note problems where you are asked to find both the intercepts, the line is usually not in y=mx+b form, rather a different form (possibly standard form Ax + By + C = 0).

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| --- | --- |
| **QUESTION 1: PART A** Given the equation 3x + 4y = 12 what are the intercepts of this line.SOLUTIONTo find the y-intercept, the x-value must be 0. 1. Substitute x=0
2. Solve the equation for y

 The y-intercept is ( 0 , )To find the x-intercept, the y-value must be 0. 1. Substitute y=0
2. Solve the equation for y

 The x-intercept is ( , 0 )**QUESTION 1: PART B** Graph the line 3x + 4y = 12 using the intercepts.Plot the coordinates of each intercept and connect the two points to create your line. | **QUESTION 2 : PART A** Given the equation -6x + 10y – 24 = 0 what are the intercepts of this line.SOLUTIONTo find the y-intercept, the x-value must be 0. 1. Substitute x=0
2. Solve the equation for y

 The y-intercept is ( 0 , )To find the x-intercept, the y-value must be 0. 1. Substitute y=0
2. Solve the equation for y

  The x-intercept is ( , 0 )**QUESTION 2 : PART B** Graph the line -6x + 10y – 24 = 0 using the intercepts.Plot the coordinates of each intercept and connect the two points to create your line. |

**Practice: Graphing with x-Intercepts and y-Intercepts**

|  |  |
| --- | --- |
| a. 4x – y = 8x-intercept: (\_\_\_\_\_, \_\_\_\_\_)y-intercept:(\_\_\_\_\_, \_\_\_\_\_) | b. 7x – 9y = 63x-intercept: (\_\_\_\_\_, \_\_\_\_\_)y-intercept:(\_\_\_\_\_, \_\_\_\_\_) |
| c. x + 2y = 5x-intercept: (\_\_\_\_\_, \_\_\_\_\_)y-intercept:(\_\_\_\_\_, \_\_\_\_\_) | d. 2x – 5y = – 4x-intercept: (\_\_\_\_\_, \_\_\_\_\_)y-intercept:(\_\_\_\_\_, \_\_\_\_\_) |
| e. 3x + 4y – 8 = 0x-intercept: (\_\_\_\_\_, \_\_\_\_\_)y-intercept:(\_\_\_\_\_, \_\_\_\_\_) | f. 4x – y = 9x-intercept: (\_\_\_\_\_, \_\_\_\_\_)y-intercept:(\_\_\_\_\_, \_\_\_\_\_) |
| ANSWERS: a. (2, 0) (0, -8) b. (9, 0), (0, -7) c. (5, 0), (0, 2.5) d. (-2, 0), (0, 0.8), e. (, 0) (0, 2) f. (, 0) (0, -9) |