

Section 5.R.8 Graphing Linear Equations in Two Variables

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Graphing Linear Equations by Plotting Points

Standard Form of a Linear Equation

Any equation of the form

where A , B , and C are real numbers and A and B are not both equal to 0, is called the standard form of a linear equation.

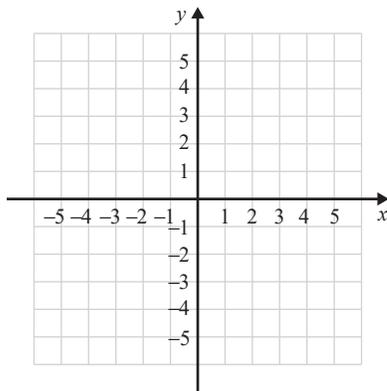
To Graph a Linear Equation in Two Variables

1. Locate any two points that _____
2. _____
3. _____
4. To check: Locate a third point that _____

▣ Example 3 Graphing a Linear Equation in Two Variables

Graph: $x - 2y = 1$

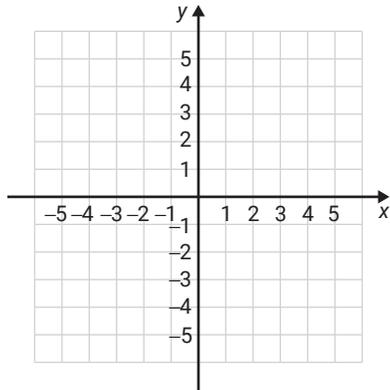
Solution



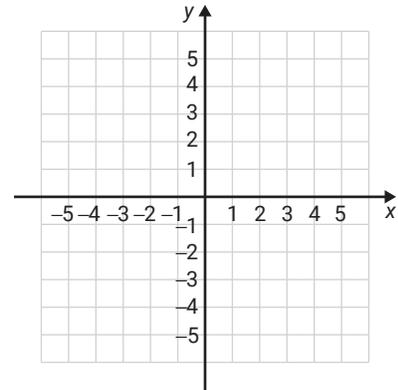
Exercises

Graph each linear equation by locating at least two ordered pairs that satisfy the given equation.

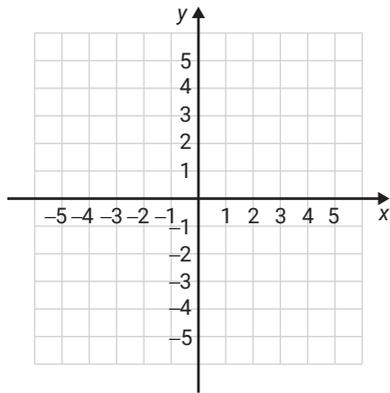
1. $x + y = 4$



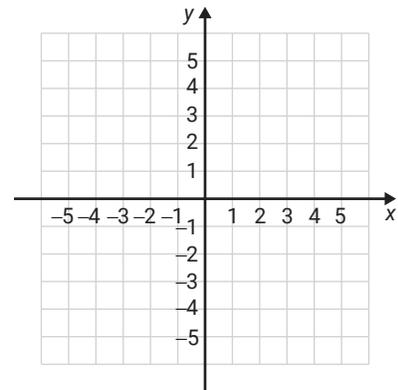
3. $2y = x$



2. $y = x$



4. $2x + y = 0$

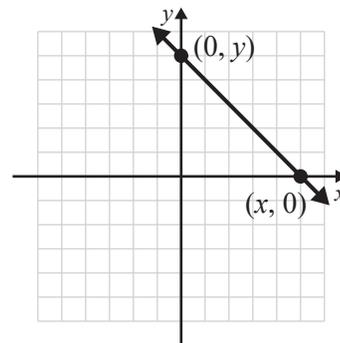


Using x - and y -Intercepts to Graph Linear Equations

Intercepts

1. To find the y -intercept (where the line crosses the y -axis),

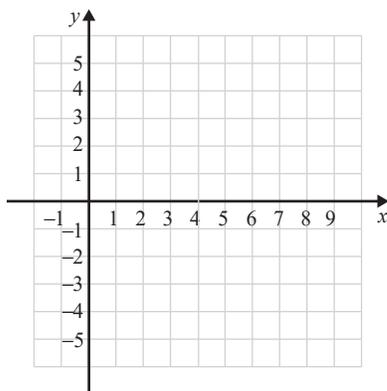
2. To find the x -intercept (where the line crosses the x -axis),



▣ Example 4 Using Intercepts to Graph Linear Equations

Graph $x + 3y = 9$ by locating the y -intercept and the x -intercept.

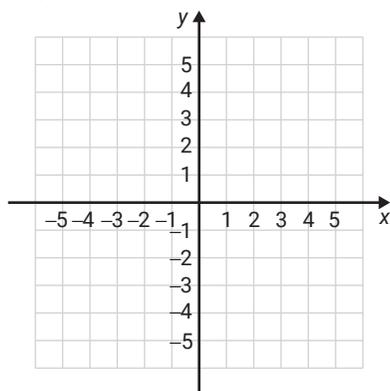
Solution



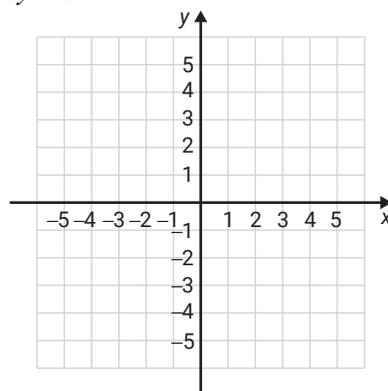
Exercises

Graph each linear equation by locating the x-intercept and the y-intercept.

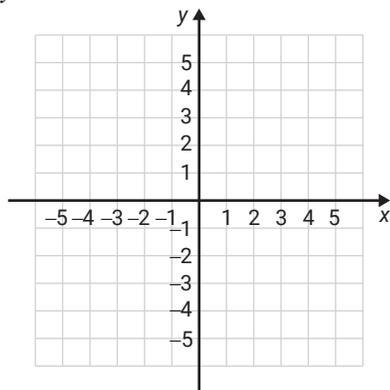
5. $x + y = 4$



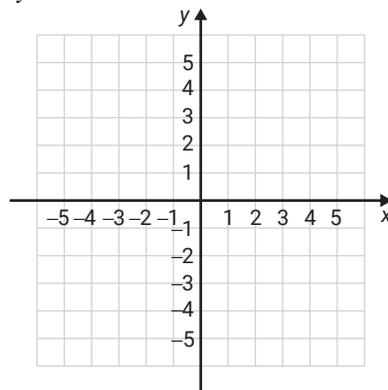
8. $5x + 2y = 10$



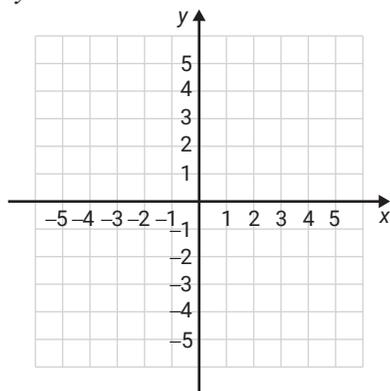
6. $x - 6y = 3$



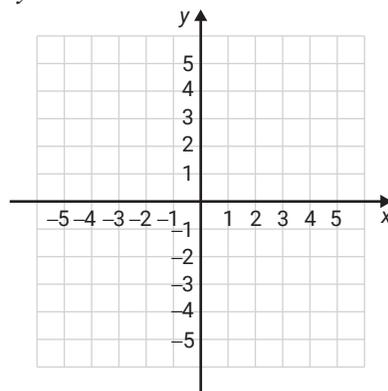
9. $5x + 3y = 7$



7. $3x - 2y = 6$



10. $2x + 3y = 5$

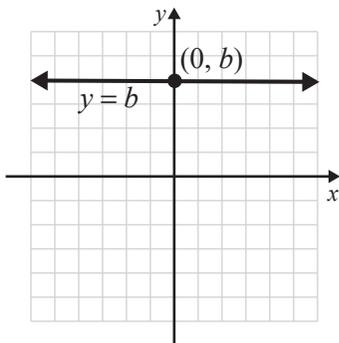


Graphing Horizontal and Vertical Lines

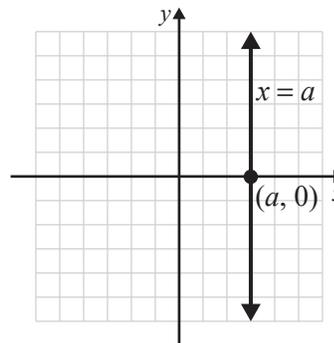
Horizontal and Vertical Lines

For real numbers a and b , the graph of _____

$y = b$ is a **horizontal line**



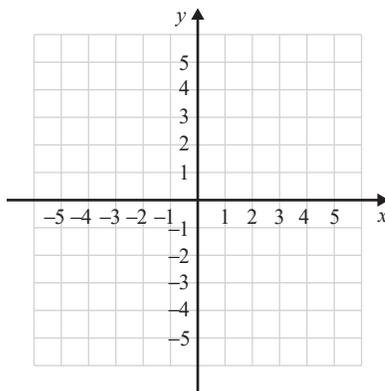
$x = a$ is a **vertical line**



▣ Example 7 Graphing Horizontal Lines

Graph the line $y = 4$ (or $0x + y = 4$).

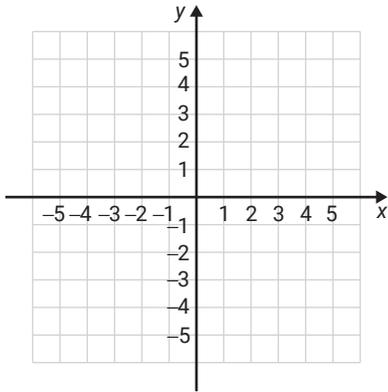
Solution



Exercises

Graph each linear equation by locating at least two ordered pairs that satisfy the given equation.

11. $x = 1$



12. $y = -3$

