Graphing Linear Equations

Objectives

- Graph Linear Equations

Notes

An equation whose graph is straight is called a **linear equation.**

Linear Equations can be written in the form $Ax + By = C$ where A and B are not both 0.

Steps for drawing the graph of a linear equation:

1. Solve equation for y.
2. Set up a table of values.
3. Graph the ordered pairs and connect them with a line.

Determine whether each equation is a linear equation. If an equation is linear, rewrite it in the form $Ax + By = C$.

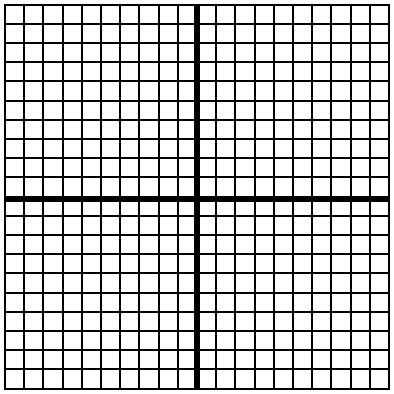
1. $4x - 2y = -1$
2. $4x = 7 + 2y$
3. $2x^2 - y = 7$
4. $x = 12$
5. $9y = x + 16$
6. $2x^2 + 3y = 4$
7. $x = -5$
8. $3x - 5y = 0$
9. $2x = 6 - y$
10. $3x^2 + 3y = 4$
11. $3x = 7 - 2y$
12. $\frac{x}{3} = 5$

Examples

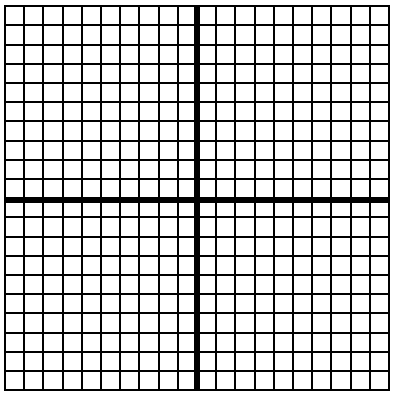
Graph each equation.

13. $y = 8x - 4$

x	y



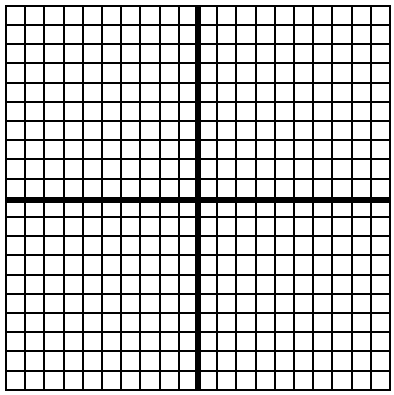
14. $y = 3x - 4$



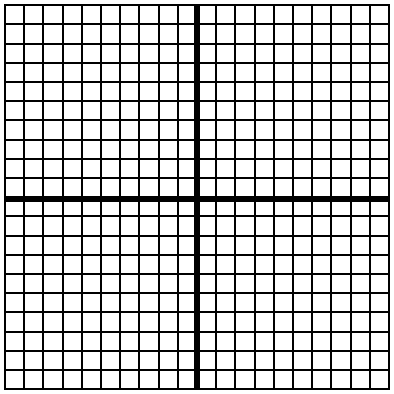
x	y

15. $3x + y = 4$

x	y



16. $3x + y = -2$



x	y

Homework
Graphing Linear Equations

Determine whether each equation is a linear equation. If an equation is linear, rewrite it in the form $Ax+By=C$.

1. $\frac{3}{x}+\frac{4}{y}=2$
2. $\frac{3}{5}x-\frac{2}{3}y=5$
3. $x+y^2=25$
4. $x+\frac{1}{y}=7$
5. $3y+2=0$
6. $2y=3x-8$
7. $5x-7=0$
8. $2x+5x=7y$
9. $4x^2-3x=y$
10. $3x=2y$
11. $\frac{x}{2}=10+\frac{2y}{3}$
12. $8x-7y=2x-5$

Graph each equation.

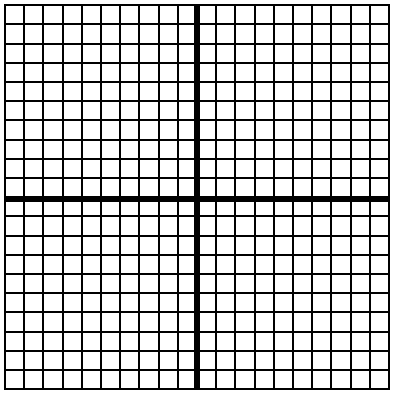
13. $y=x+3$
14. $y=-2x-1$
15. $y=-1x+5$
16. $y=x$
17. $x+6=-5$
18. $y=3x+1$
19. $6x+7=-14y$
20. $2x+7y=9$
21. $y+3=4$
22. $x-6=\frac{-1}{3}y$

Examples

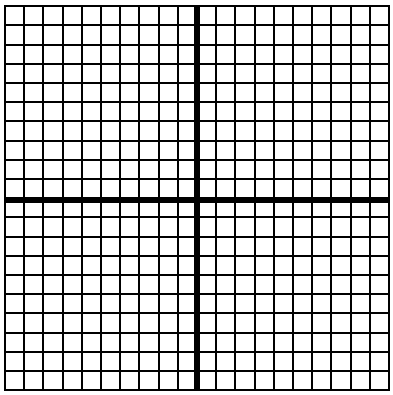
Graph each equation.

17. $2x+5y=10$

x	y



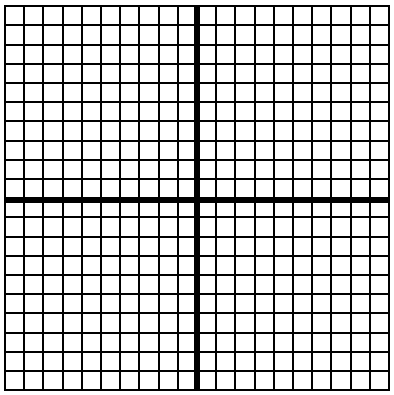
18. $2x+5y=8$



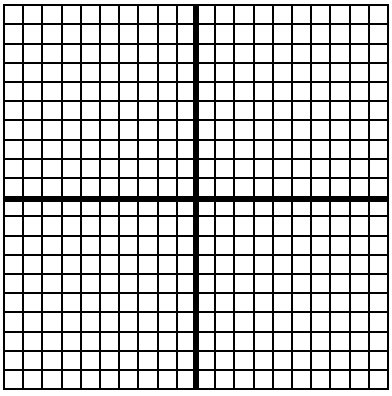
x	y

19. $4x+3y=12$

x	y



20. $\frac{1}{2}x=8-y$



x	y