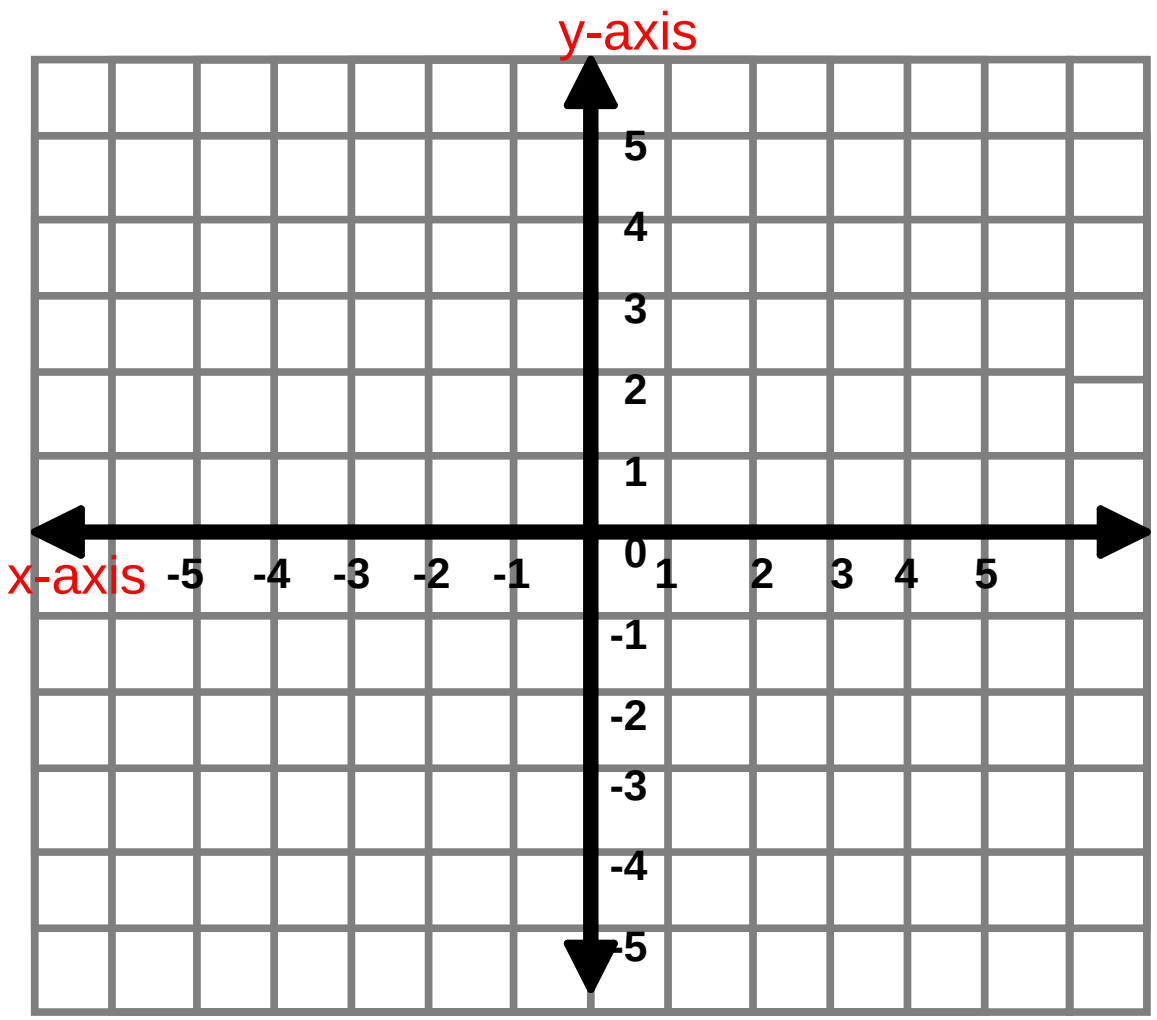
4.5

Graphing Linear Equations in Standard Form

Graphing Linear Equations

Graph the following equation using slope-intercept form.

1) $-2x+3y=-6$



Standard Form of a Linear Equation

$$2x + y = 2$$

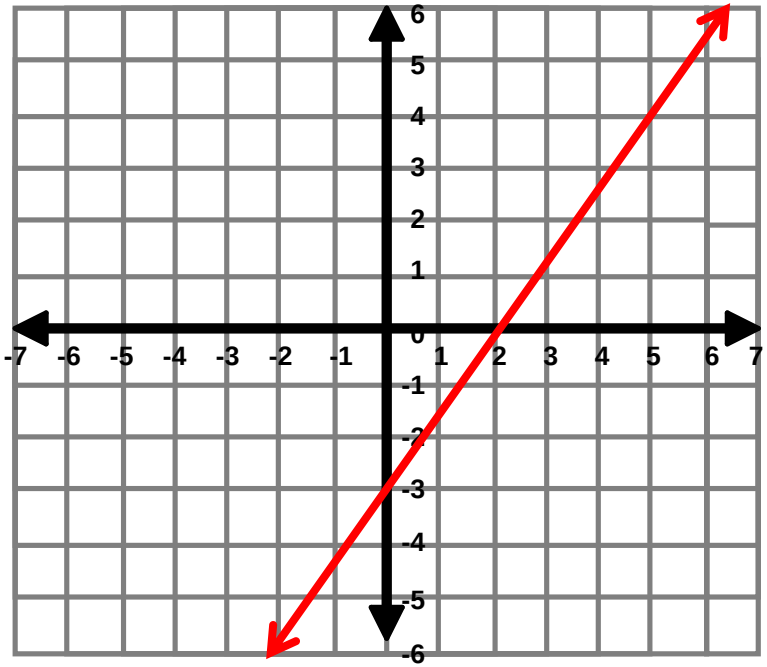
$$\boldsymbol{ax + by = c}$$

Any equation in this form will form a line.

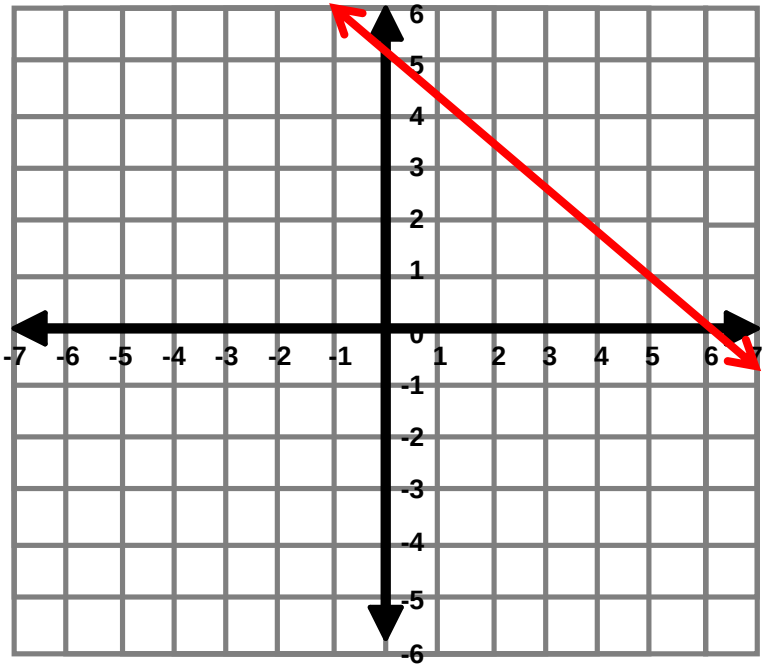
Graphings Using Intercepts

***x*-intercept** - the *x*-coordinate of a point where the graph crosses the x-axis

***y*-intercept** - the *y*-coordinate of a point where the graph crosses the y-axis



x-intercept: coordinate:
y-intercept coordiante:

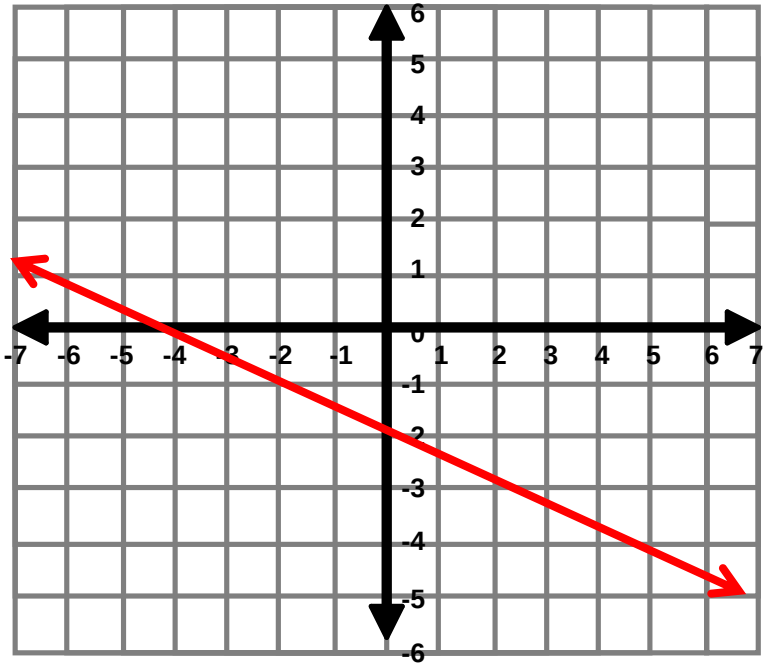


x-intercept: coordinate:
y-intercept coordiante:

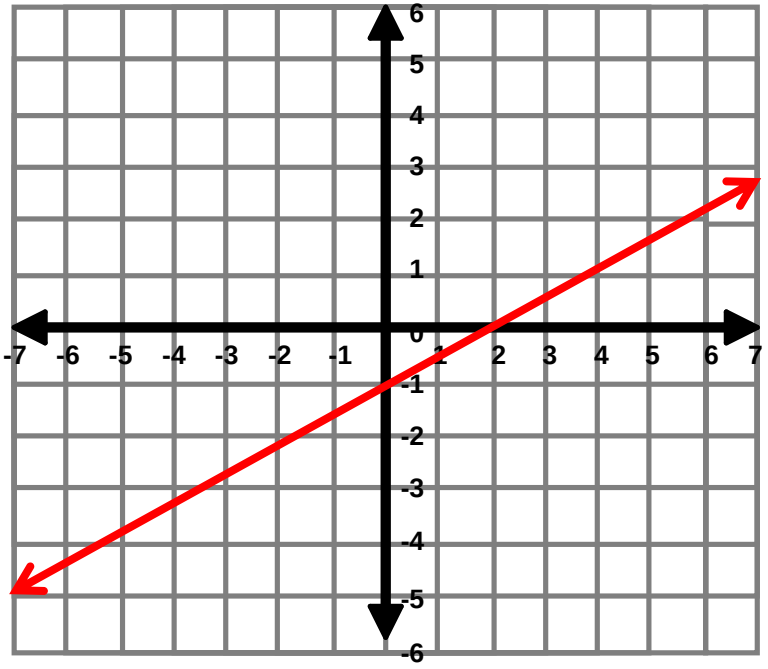
Graphings Using Intercepts

***x*-intercept** - the *x*-coordinate of a point where the graph crosses the x-axis

***y*-intercept** - the *y*-coordinate of a point where the graph crosses the y-axis



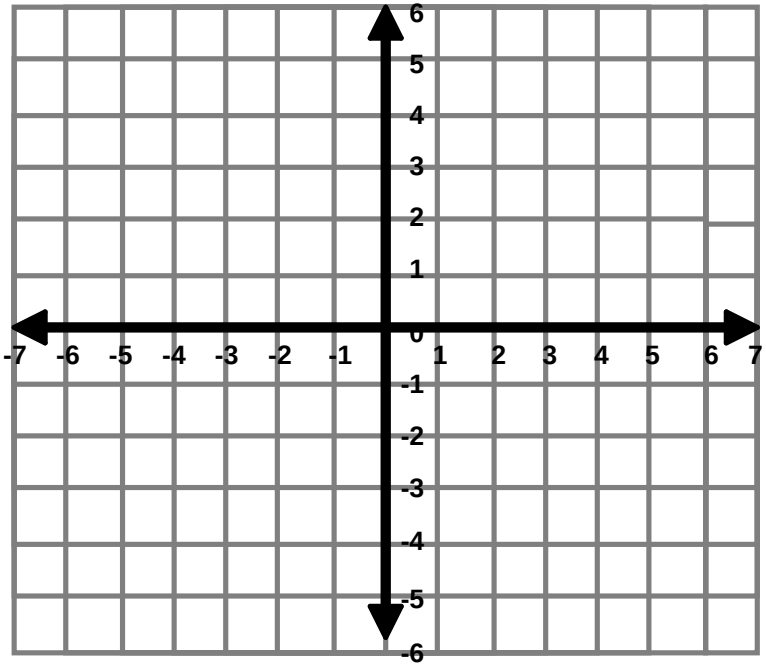
x-intercept: coordinate:
y-intercept coordiante:



x-intercept: coordinate:
y-intercept coordiante:

Finding the Intercepts of a Line

$$x - 3y = 3$$



x-intercept

Plug-in ***y*=0** into the equation and solve for ***x***.

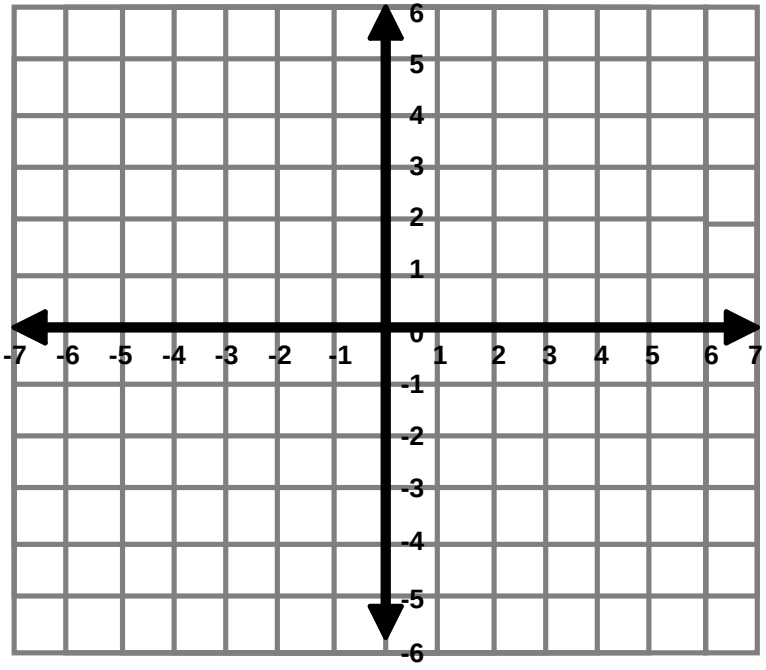
y-intercept

Plug-in ***x*=0** into the equation and solve for ***y***.

Graph the equation using the intercepts.

Practice

1) $4x - 6y = 12$



x-intercept

Plug-in ***y*=0** into the equation and solve for ***x***.

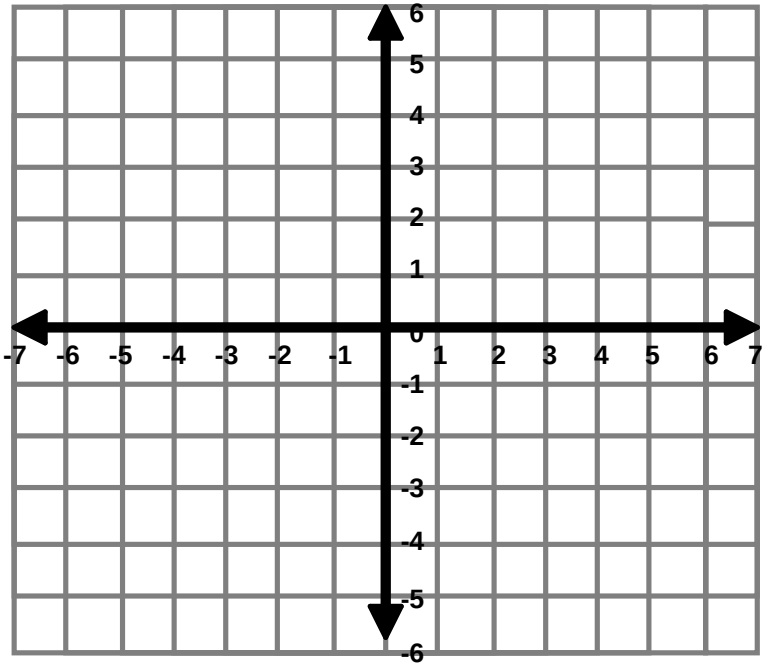
y-intercept

Plug-in ***x*=0** into the equation and solve for ***y***.

Graph the equation using the intercepts.

Practice

2) $2x - 3y = 12$



***x*-intercept**

Plug-in ***y*=0** into the equation and solve for ***x***.

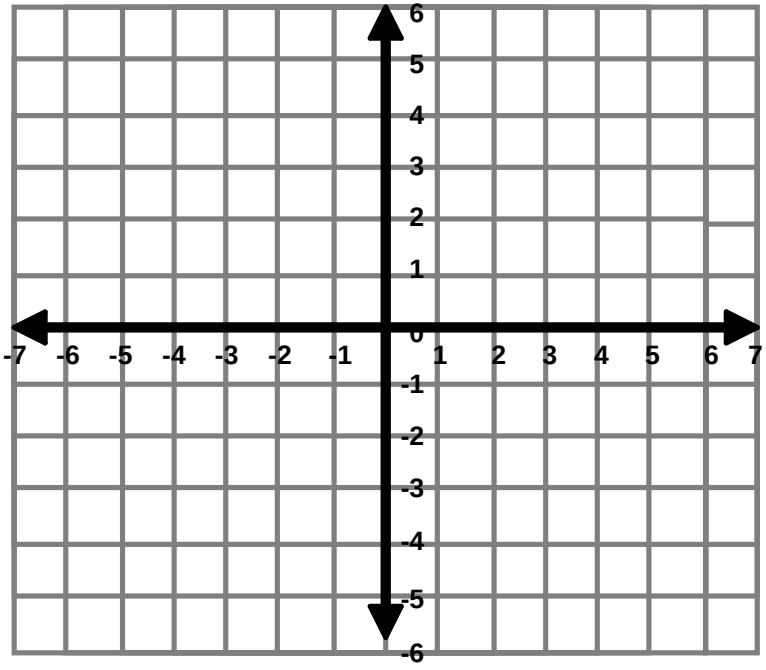
***y*-intercept**

Plug-in ***x*=0** into the equation and solve for ***y***.

Graph the equation using the intercepts.

Practice

3) $-2x + y = -4$



***x*-intercept**

Plug-in ***y*=0** into the equation and solve for ***x***.

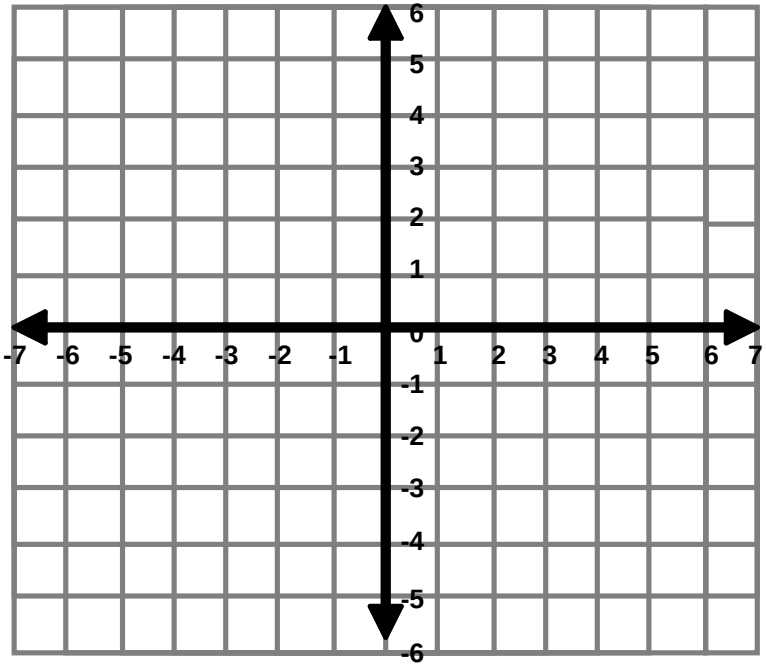
***y*-intercept**

Plug-in ***x*=0** into the equation and solve for ***y***.

Graph the equation using the intercepts.

Practice

4) $x + 2y = 4$

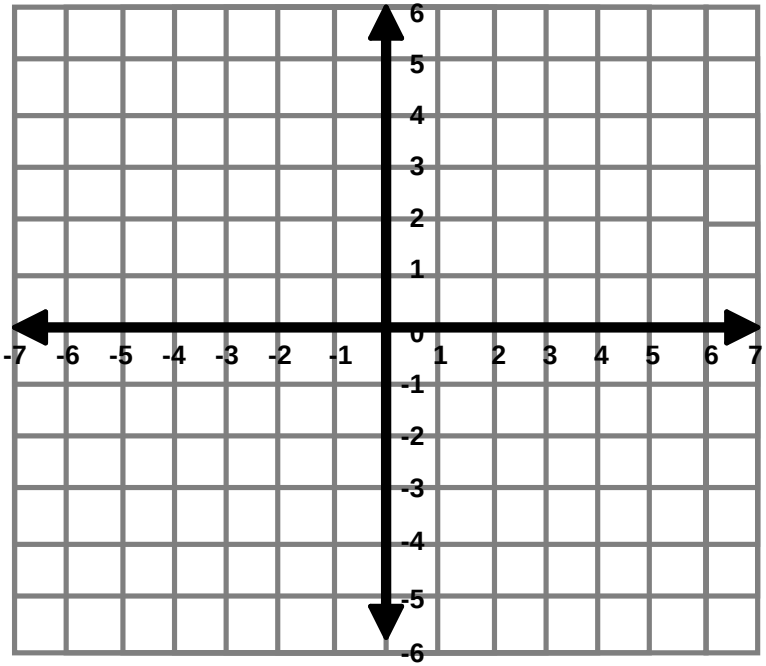


Graph the equation using the intercepts.

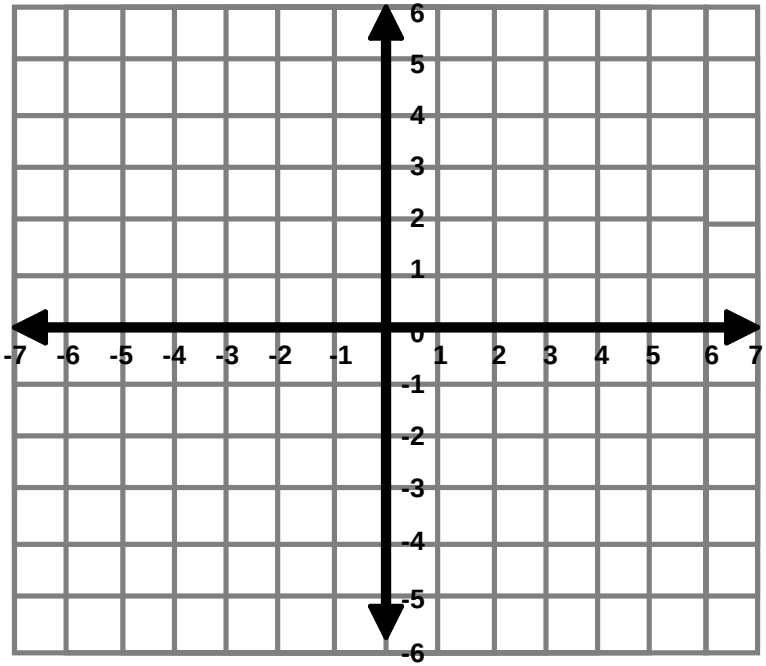
Practice

5) Graph the following two ways: $-2x+3y=-6$

Change to slope-intercept form:

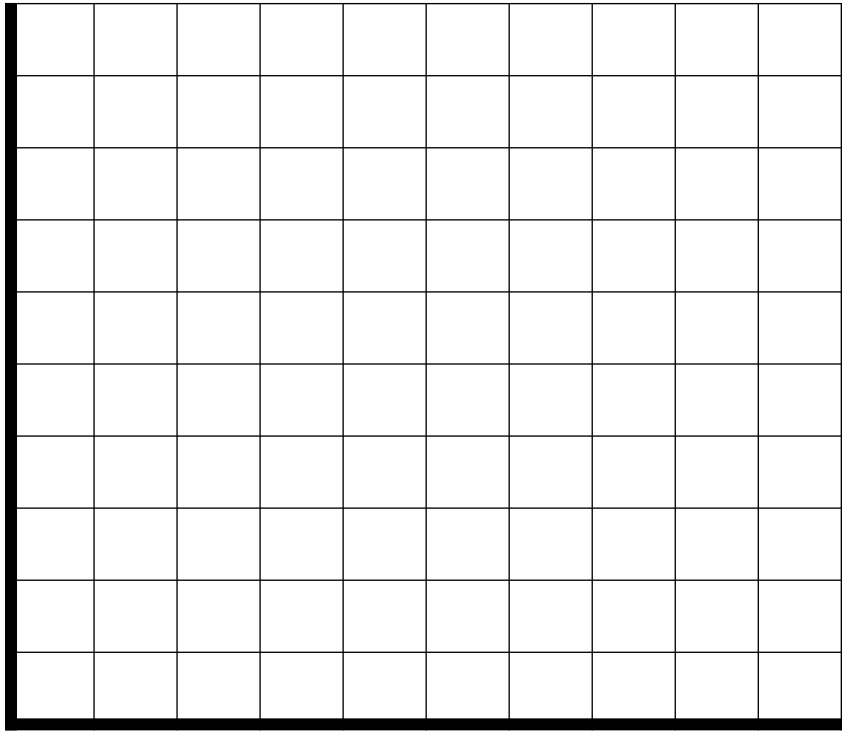


Use intercepts.



Exploring

6) You have \$12 to spend on apples and bananas. Graph the equation $2x + 3y = 12$, where *x* is the number of apples and *y* is the number of bananas.



Interpret the intercepts.