4.1

Graphing Linear Equations

Today's Learning Goals:

- Understand that lines represent solutions of linear equations.
- Graph linear equations.

Review

Solve the equation for y.

$$y = 2x + 5$$

1) **If** $x = 3$

2) **If** $x = -2$

Review

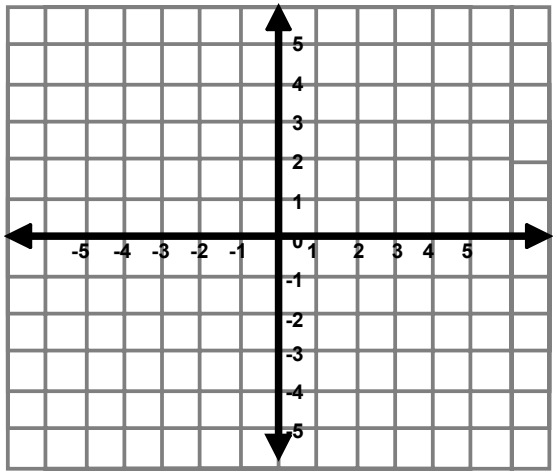
Solve the equation for y.

$$y = \frac{1}{2}x + 1$$

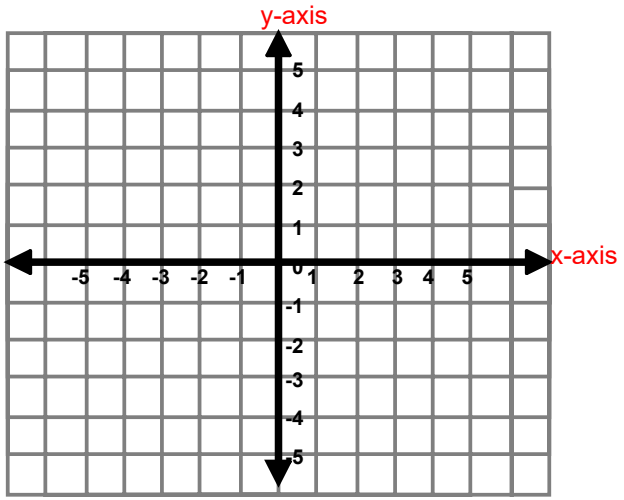
3) **If** $x = 4$

4) **If** $x = -6$

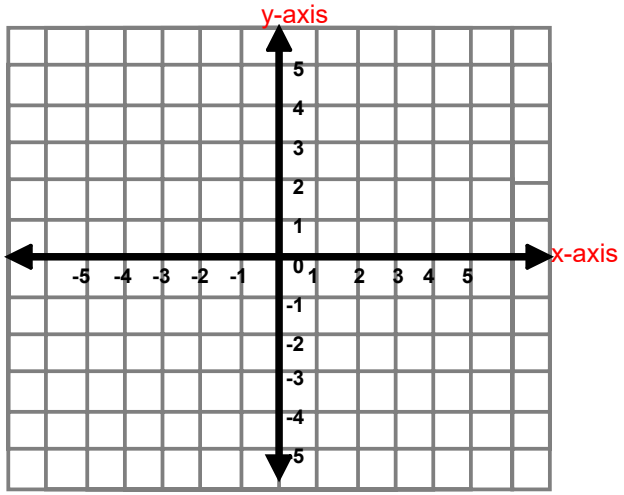
COORDINATE PLANE



COORDINATES



PLOTTING POINTS

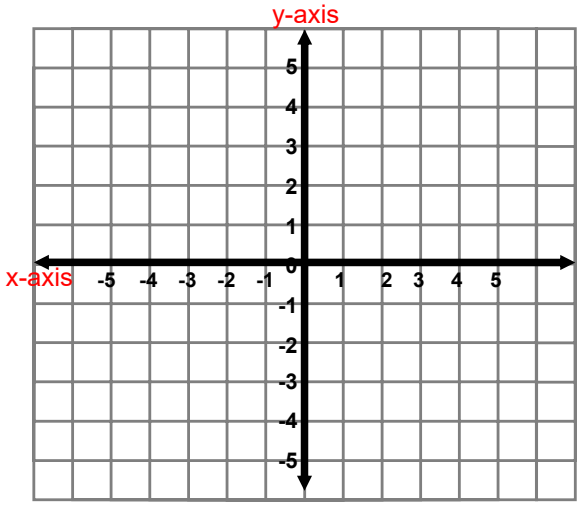


A(5,2)
B(-3,-4)
C(-1,5)
D(3,-5)
E(4,6)
F(0,0)
G(4,0)
H(0,-3)

Using a T-Chart

1) Graph $y = x - 3$ using a T-chart.

Fill in the following table of values if x = -1, 0, 1, 2

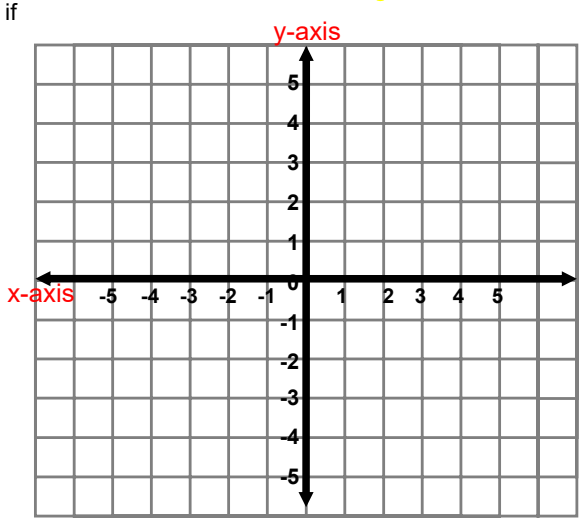


2) Graph the linear equation using a T-chart.

$$y = 3x + 1$$

Fill in the following T-Chart if x is -1, 0, 1, 2.

Graph the points.

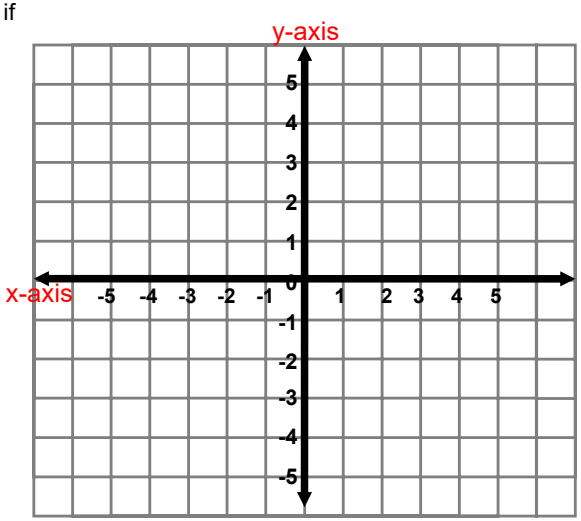


3) Graph the linear equation using a T-chart.

$$y = -x + 4$$

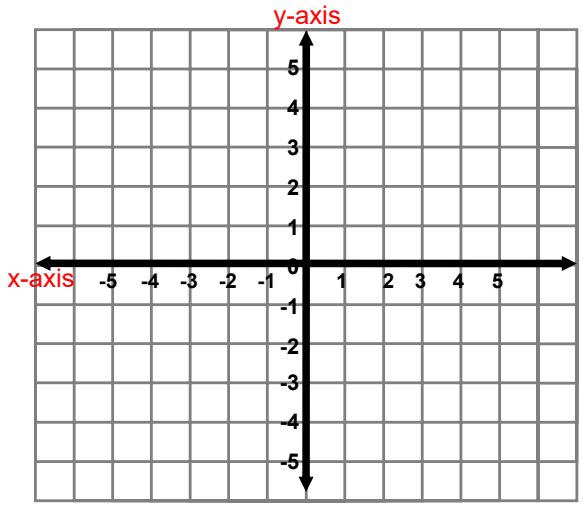
Fill in the following T-Chart if x is -1, 0, 1, 2.

Graph the points.



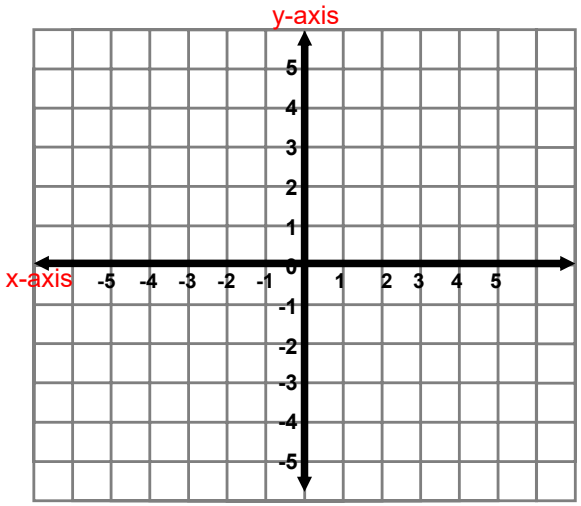
4) Graph the linear equation using a T-chart.

$$y = 2x - 1$$



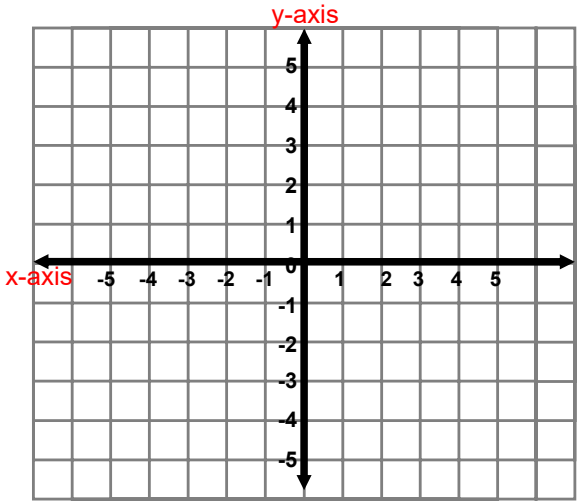
Using a T-Chart

5) Graph $y = \frac{1}{2}x - 3$ using a T-chart.



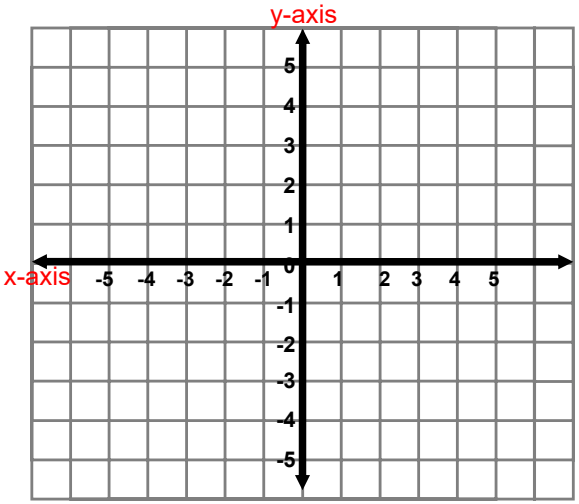
6) **Graph the linear equation using a T-chart.**

$$y = \frac{1}{3}x + 2$$



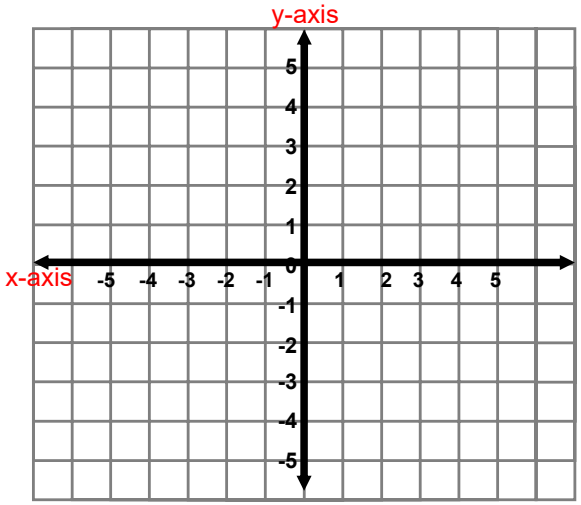
7) **Graph the linear equation using T-chart.**

$$y = -\frac{1}{4}x - 2$$



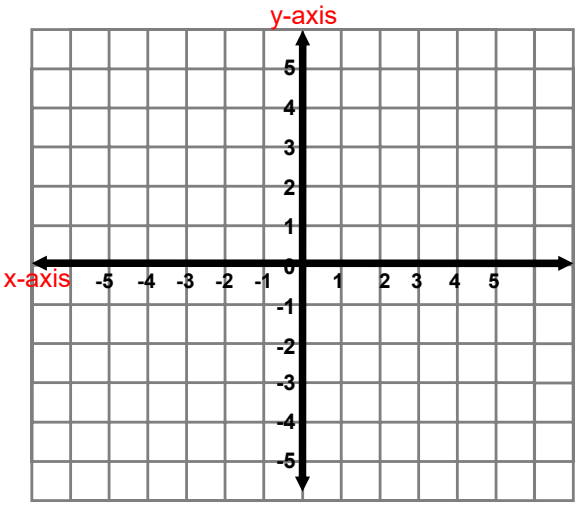
8) **Graph the linear equation using T-chart.**

$$y = \frac{3}{4}x$$



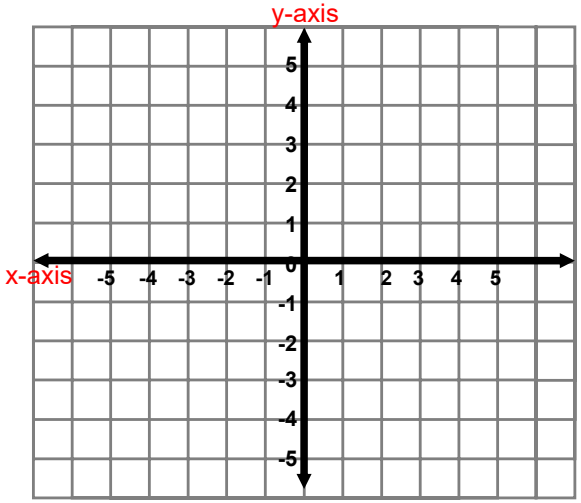
Graphing Horizontal and Vertical Lines

9) $y = 4$



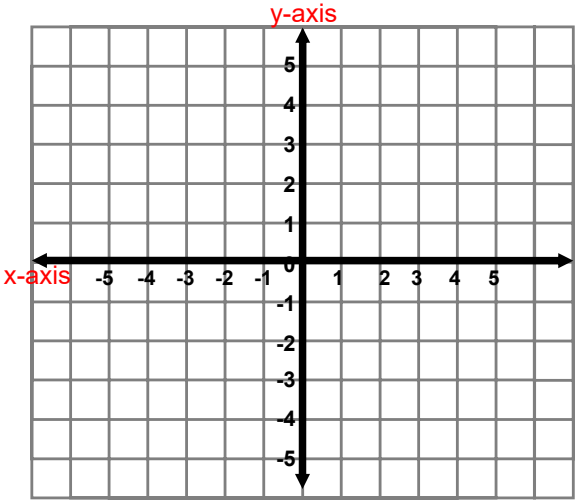
Graphing Horizontal and Vertical Lines

10) $x = 3$



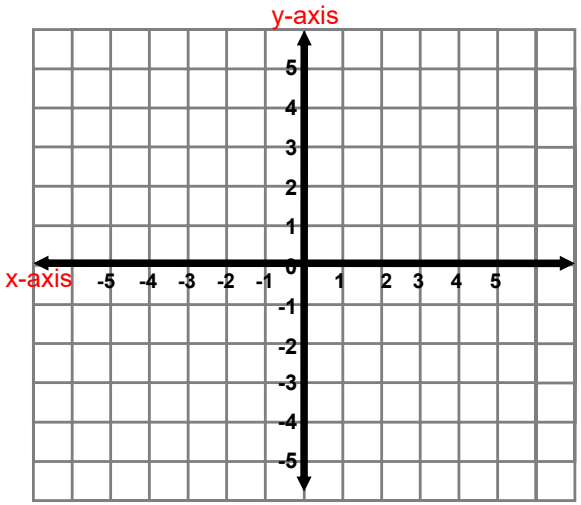
Graphing Horizontal and Vertical Lines

11) $y = -3$



Graphing Horizontal and Vertical Lines

12) $x = -5$



Solving Two-Step Equations

- Solve by using the INVERSE operation to undo operations
- Undo two-step equations by doing PEMDAS backwards!!

a) $2x - 35 = 15$

b) $837 = \frac{p}{2} + 37$

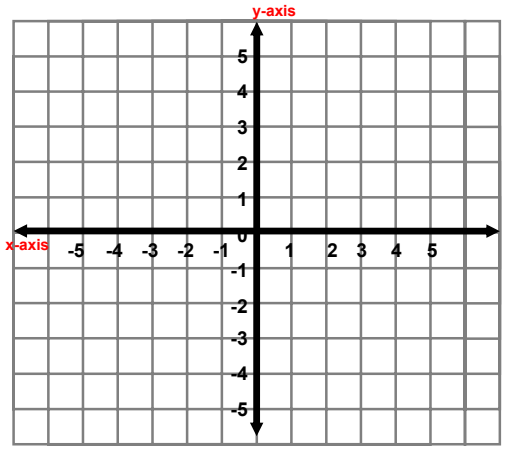
Review – Isolating an equation for y

c) $4x + y = 8$

d) $8x + 4y = 16$

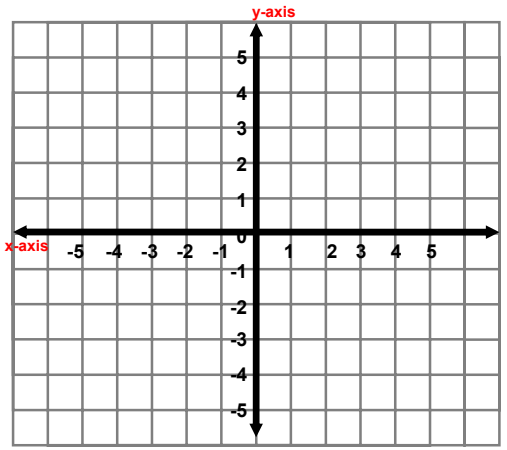
13) Solve for *y* and then graph the equation.

$2x + y = -1$



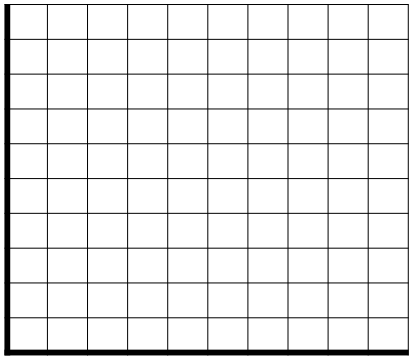
14) Solve for *y* and then graph the equation.

$9x + 3y = 6$



APPLICATION

16) The cost y (in dollars) for making friendship bracelets is $y=0.5x+2$, where x is the number of bracelets.
   a) Graph the equation
   b) How many bracelets can be made with $10?



17) The cost y (in dollars) for making friendship bracelets is $y=0.5x+2$, where x is the number of bracelets.
   a) Graph the equation
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