financialalgebra

2.5 Graphing Linear Equations
Student Activity Packet
UNIT: CHECKING & LINEAR EQUATIONS

Name:

IN THIS LESSON, YOU WILL:

- Graph a linear equation using slope-intercept form
- Use graphs to evaluate fee structures for checking accounts
- Apply linear equations to real-world wage scenarios

INTRO

Compare: ATM Fees

Many banks charge for out of network ATM use. Out of network ATMs are ones provided by someone other than your bank. While you're away at college, you will have to rely on these out of network ATMs if your local bank does not have a branch near your school.

Compare the following checking account fee structures.

	Monthly Maintenance Fee	Out of Network ATM Charge
Hometown National Bank	$5.00	$2.00
Freedom Bank	$1.00	$3.00

1. **Which bank offers a better fee structure for a month of usage? Describe your reasons.**

2. **Is one bank ALWAYS better? What factors might affect which bank has the better fee structure?**

3. **How could you avoid these fees if you are away at school without access to a local branch?**

4. **Find a partner and discuss your bank choices. Write down how you could best compare the two fee structures.**

LEARN IT

EXAMPLE: Graphing Linear Equations Using Slope-Intercept Form (Video Walkthrough)

1. **Review the example completed problem below. You can see it modeled here.**

   Graph the equation $y = \frac{1}{3}x + 4$

1 **Identify the slope and y-intercept**

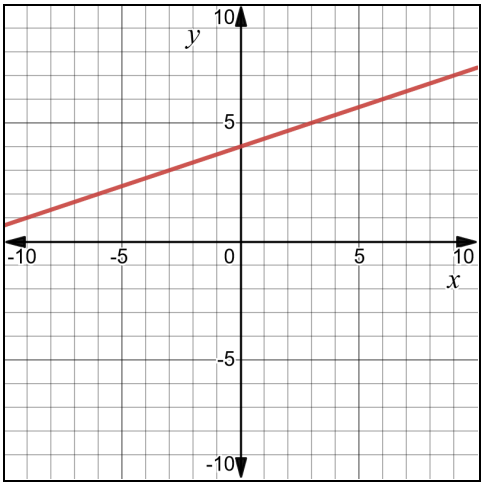
y-intercept: 4
slope: 1/3

2 **Plot the y-intercept**

3 **Use slope to plot additional points**

Starting at the y-intercept, use the slope to move to create new points

- The numerator of the slope fraction is your up/down movement
- The denominator of the slope fraction is your left/right movement

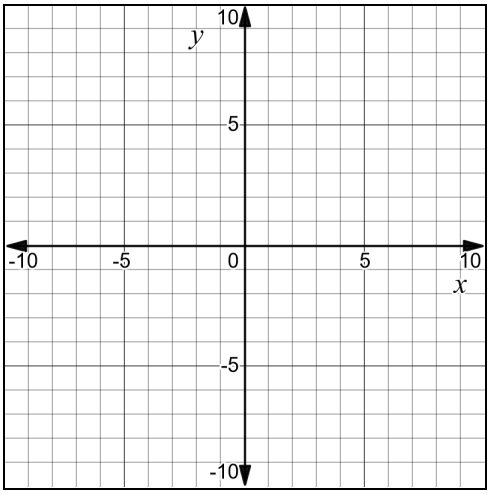


2. **Graph the equation** $y = -\frac{5}{2}x + 1$

1 **Identify the slope and y-intercept**

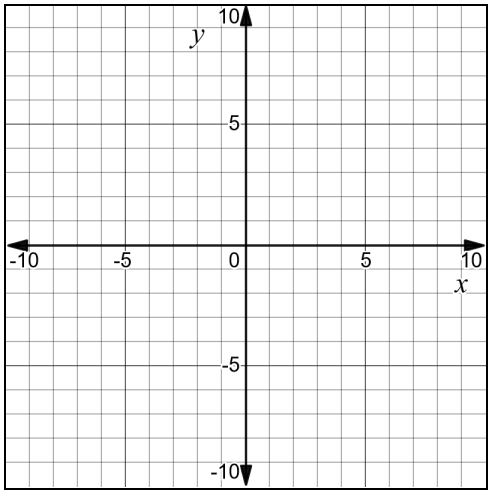
2 **Plot the y-intercept**

3 **Use slope to plot additional points**

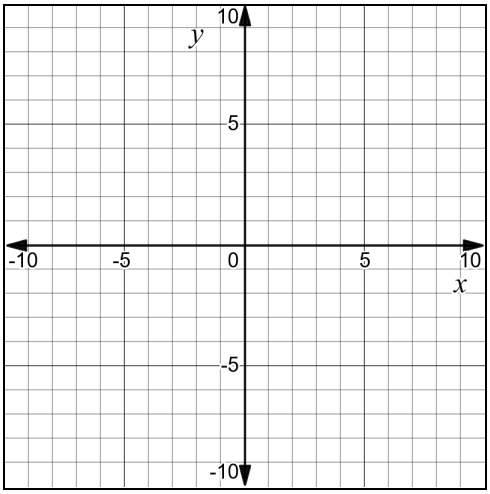


Additional Practice
Follow your teacher's directions to complete the examples below.

3. Graph the equation $y = -3x$



4. Graph the equation $y = x - 5$



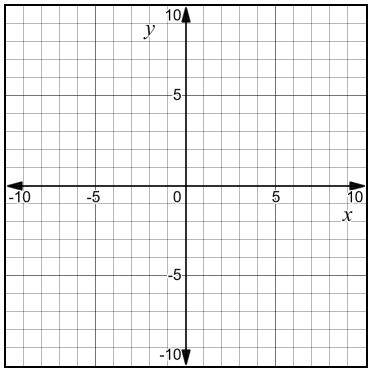
PRACTICE IT

5 POINT PRACTICE: Graphing Linear Equations using Slope and Y-intercept

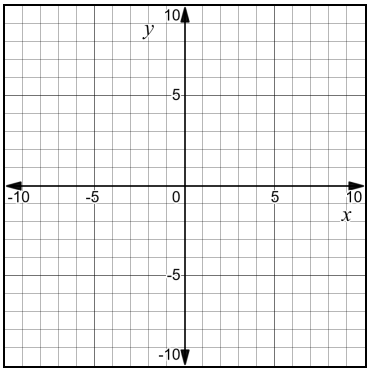
Complete any combination of problems that add to 5 points or more. For each problem, graph the equation using slope and y-intercept.

1 point each

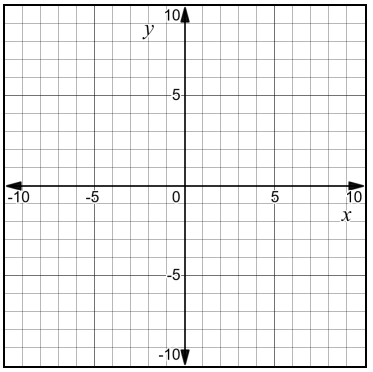
$y = \frac{1}{2}x + 3$



$y = \frac{2}{3}x - 4$

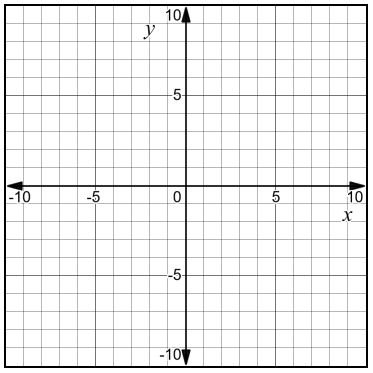


$y = 4x - 5$

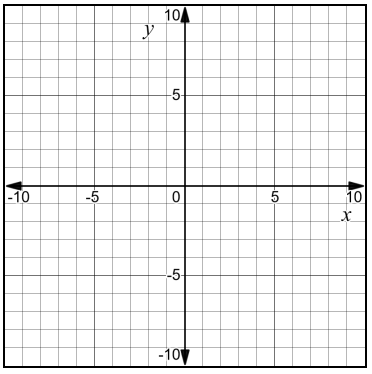


2 points each

$y = -5x + 6$

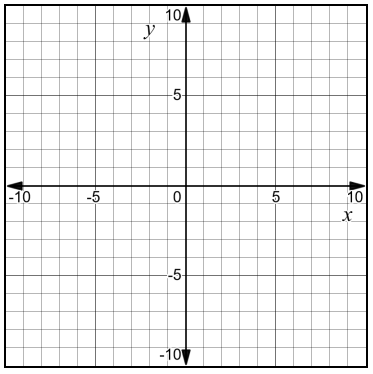


$y = -\frac{2}{3}x$

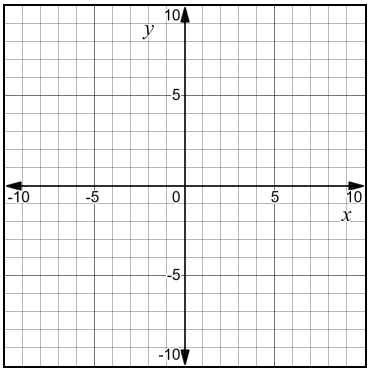


3 points each

$y = -2.5x + 3$



$y = -x + 1$

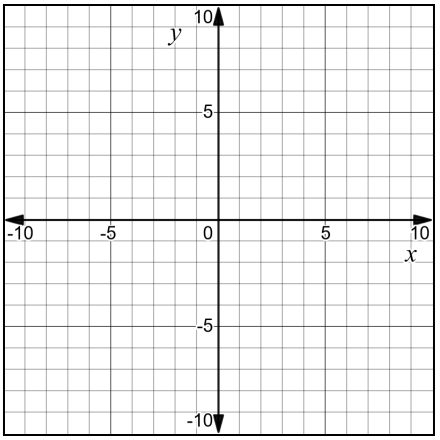


EXPLORE IT

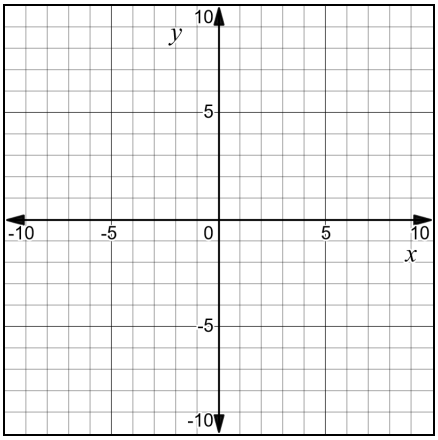
Explore: How Does Slope Effect the Graph of a Line?
In your group, have each member graph ONE of the four equations below and share with the rest of the group. Then use the graphs to answer the questions below.

1. **Graph ONE of the following four equations.**

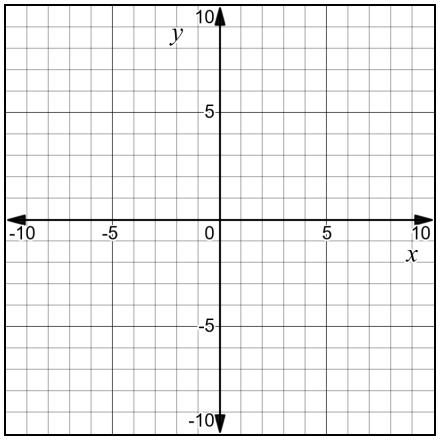
Graph A:
Graph the equation $y = 2x + 1$



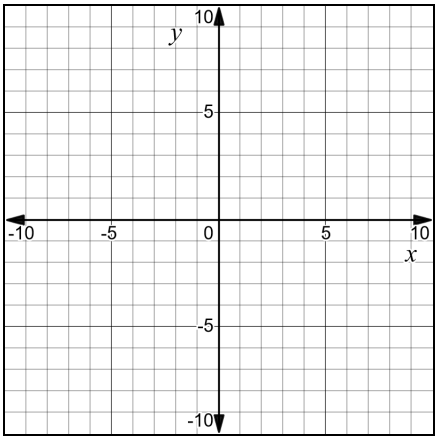
Graph B:
Graph the equation $y = -2x + 1$



Graph C:
Graph the equation $y = \frac{1}{2}x + 1$



Graph D:
Graph the equation $y = -\frac{1}{2}x + 1$



2. **Compare graphs in your group. How does the sign of the slope affect the graph of the equation?**

3. **How does the size of the slope change the graph of the equation?**

APPLY IT

Follow your teacher's directions to complete the Application Problems.

Teachers, you can find the Application problems linked in the Lesson Guide.