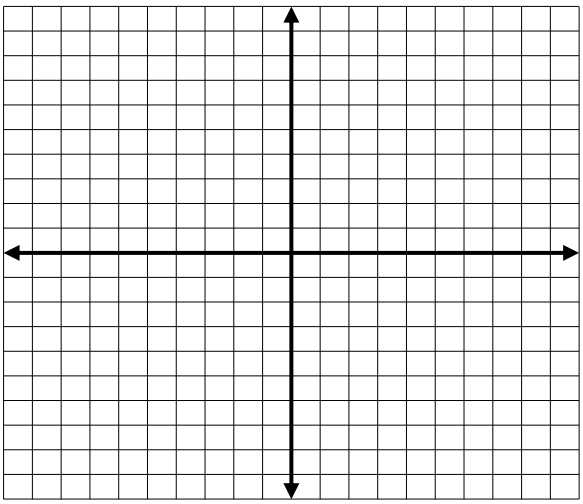
SOLVING SYSTEMS USING A CALCULATOR

Take out your graphing calculators! Solve the system using your calculator.

$y = 3x - 6$

$y = -4x + 29$



STEP ONE: Enter equations in the Y= screen

STEP TWO: Use the TBLSET function. Set TBLStart to 0 and △Tbl to 1.

STEP THREE: Press 2nd GRAPH to access the TABLE screen.

STEP FOUR: Make a sketch of the graph to the right.

PARTNER THINK TANK:

1) Which x- value gives the same value for Y1 and Y2?

x = 5

2) **Complete the following statement:**
The point (__5__, __9__) is a solution of each linear equation, so it is the solution to the system.

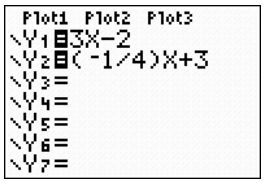
LET's PRACTICE! Follow the following steps as you solve the system.

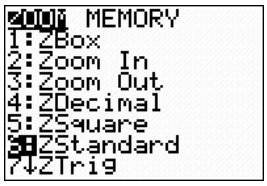
$y = 3x - 2$

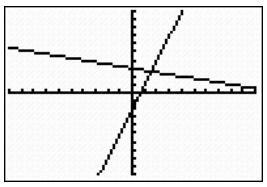
$y = \frac{-1}{4}x + 3$

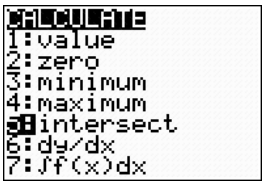
1. Put both equations into $y = mx + b$ form.
2. Press the **"Y="** button and type one equation into **"Y1="**
3. Type the other equation into **"Y2="**
4. Set a window by pressing **ZOOM 4** or **ZOOM 6.** If you still can't see the graph, press WINDOW and change the settings by hand.
5. Press **TRACE** and trace near where the two graphs cross
6. Press **2ND, TRACE, 5 ("Intersect")**
7. Press **ENTER** to mark the first graph
8. Press **ENTER** to mark the second graph
9. Press **ENTER** to guess at the intersection point
10. The *x*-coordinate and *y*-coordinate are the solution to system

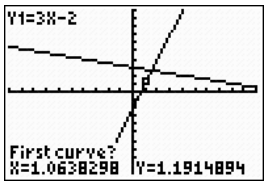
(1.54, 2.62)

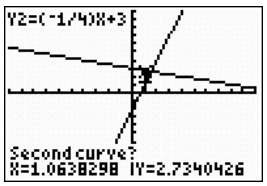


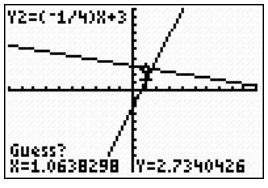


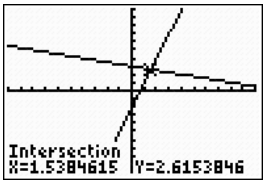












Partner Practice: Use a table or a graph to solve each system with your graphing calculator. Round to the nearest hundredth.

1. $2x - 5y = 9$ $\Rightarrow y = \frac{2}{5}x - \frac{9}{5}$
   $y = 3x - 1$

   $(-0.31, -1.92)$

2. $y = -x - 2.5$
   $y = 2.5x - 11.25$

   $(2.5, -5)$

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

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

   $(6\overline{6}, -0.\overline{3})$

4. $-y = -0.75x + 5.5$

   $2.5x + y = 1.5 \Rightarrow y = -2.5x + 1.5$

   $(2.15, -3.88)$

★ Need to adjust window ★

5. $4x + y = -19$
   $y - 20 = \frac{1}{3}x$

   $(-9, 17)$

6. $x - 8y = -2 \Rightarrow y = \frac{1}{8}x + \frac{1}{4}$
   $-4x + 10y = 14 \Rightarrow y = \frac{2}{5}x + \frac{7}{5}$

   $(-4.18, -0.27)$

Now solve some application problems using the calculator! See how much easier it is?!

7. Your mom is out school shopping for you, and she finds pens for \$0.15 each and notebooks for \$0.95 each. If she ends up with 27 items in her cart and spends \$9.65, how many of each item did she buy?

Define the Variables:	*System of Equations:*	*Solution:*
x = # of pens	$0.15x + 0.95y = 9.65$	20 pens
y = # of notebooks	$x + y = 27$	7 notebooks

8. HINSDALEPALOOZA is coming to town this summer! Admission for children is \$1.50 and for adults is \$4.00. It was a great success with 2200 total people attending and collected a total of \$5050. How many children and how many adults attended?

Define the Variables:	*System of Equations:*	*Solution:*
x = # of children tix	$1.50x + 4y = 5050$	1500 children tix & 700 adult tix sold
y = # of Adult tix	$x + y = 2200$	