



# Graphing Calculator Investigation

A Preview of Lesson 4-3

## Graphs of Relations

You can represent a relation as a graph using a TI-83 Plus graphing calculator.

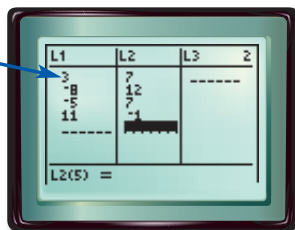
Graph the relation  $\{(3, 7), (-8, 12), (-5, 7), (11, -1)\}$ .

### Step 1 Enter the data.

- Enter the  $x$ -coordinates in L1 and the  $y$ -coordinates in L2.

KEYSTROKES: **STAT** **ENTER** 3 **ENTER** -8  
**ENTER** -5 **ENTER** 11 **ENTER** **▶** 7 **ENTER**  
 12 **ENTER** 7 **ENTER** -1 **ENTER**

The first ordered pair is (3, 7).



### Step 2 Format the graph.

- Turn on the statistical plot.

KEYSTROKES: **2nd** **[STAT PLOT]** **ENTER** **ENTER**

- Select the scatter plot, L1 as the Xlist and L2 as the Ylist.

KEYSTROKES: **▼** **ENTER** **▼** **2nd** **L1**  
**ENTER** **2nd** **L2** **ENTER**

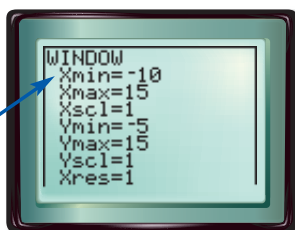


### Step 3 Choose the viewing window.

- Be sure you can see all of the points.  
 $[-10, 15]$  scl: 1 by  $[-5, 15]$  scl: 1

KEYSTROKES: **WINDOW** -10 **ENTER** 15 **ENTER**  
 1 **ENTER** -5 **ENTER** 15 **ENTER** 1

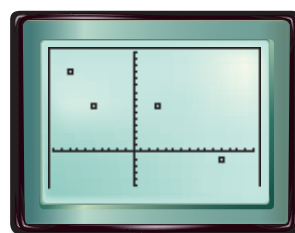
The  $x$ -axis will go from -10 to 15 with a tick mark at every unit.



### Step 4 Graph the relation.

- Display the graph.

KEYSTROKES: **GRAPH**



$[-10, 15]$  scl: 1 by  $[-5, 15]$  scl: 1

## Exercises

Graph each relation. Sketch the result.

- $\{(10, 10), (0, -6), (4, 7), (5, -2)\}$
- $\{(-4, 1), (3, -5), (4, 5), (-5, 1)\}$
- $\{(12, 15), (10, -16), (11, 7), (-14, -19)\}$
- $\{(45, 10), (23, 18), (22, 26), (35, 26)\}$

- MAKE A CONJECTURE** How are the values of the domain and range used to determine the scale of the viewing window?