Name _____

Class _____

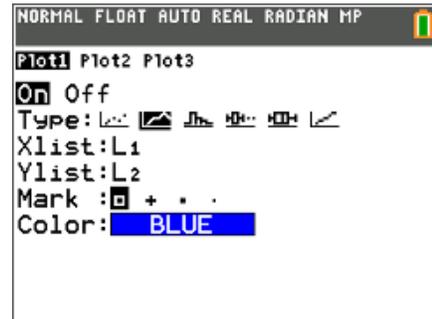### Problem 1 – Creating a Scatter Plot

Open the list editor by pressing [stat] [enter]. Enter the *x*-values into list **L1** and the *y*-values into list **L2**.

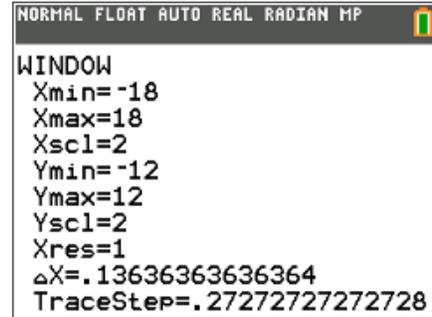| *x*	2	8	8	12	8	8	2	2
y	3	3	1	5	9	7	7	3

Create a connected scatter plot of **L1** vs. **L2**.

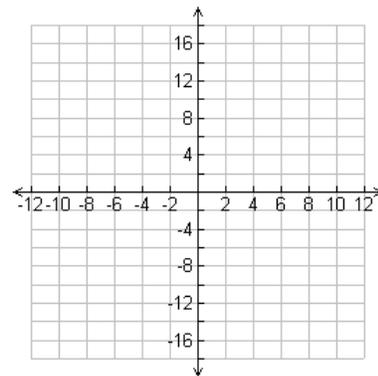Press [2nd] [stat plot] and select **Plot1**. Change the settings to match those shown at the right.

Press [window] and adjust the window settings to those shown at the right.

Press [graph] to view the scatter plot.

1. Sketch the scatter plot.

Problem 2 – Reflections and Rotations

Go back to the list editor. Enter the formula **=–L1** at the top of list **L3** to create the opposite of each of the *x*-values in **L1**.

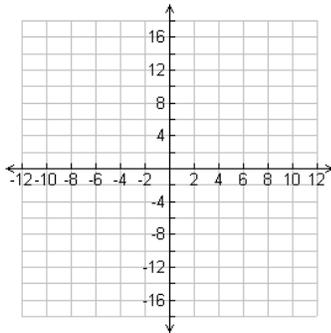Then, enter the formula **=–L2** at the top of list **L4** to create the opposite of each of the *y*-values in **L2**.

Graph the following scatter plots using **Plot2**, one at a time. For each combination of lists, determine what type of reflection occurred.
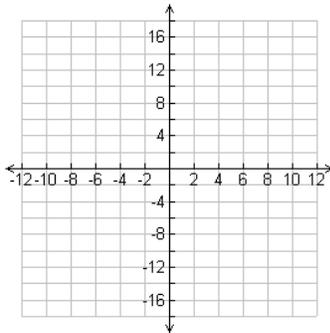
Press graph to view **Plot1** and **Plot2** together.

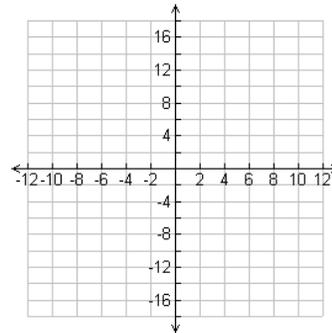**2.** $x \leftarrow$ **L3** and $y \leftarrow$ **L2**

3. $x \leftarrow$ **L1** and $y \leftarrow$ **L4**

4. $x \leftarrow$ **L2** and $y \leftarrow$ **L1**

$(-x, y)$ _____

$(x, -y)$ _____
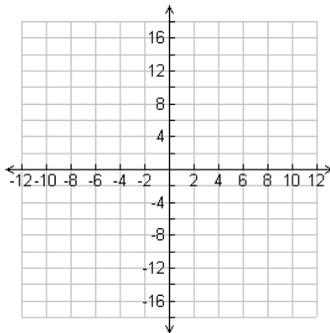
(y, x) _____

Use **Plot2** to create the following scatter plots. For each combination, determine what type of rotation occurred.
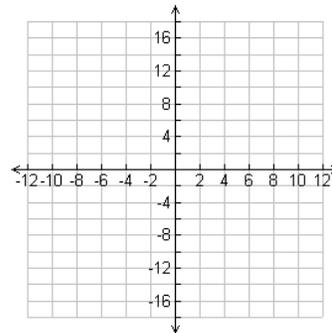
5. $x \leftarrow$ **L4** and $y \leftarrow$ **L1**

6. $x \leftarrow$ **L2** and $y \leftarrow$ **L3**

7. $x \leftarrow$ **L3** and $y \leftarrow$ **L4**

$(-y, x)$ _____

$(-x, -y)$ _____
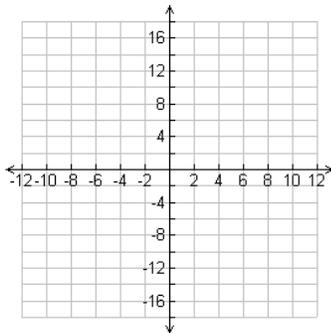
$(y, -x)$ _____

Problem 3 – Translations

Press stat enter to go back to the list editor.

In the formula bar for **L3**, enter **=L1–5** to translate the
x-values. In the formula bar for **L4**, enter **=L2+3** to translate
the y-values.

Change **Plot2** so that the **Xlist** is **L3** and the **Ylist** is **L4**. Press
[graph] to view the scatter plots.

8. Where did the image shift? How many units left/right and
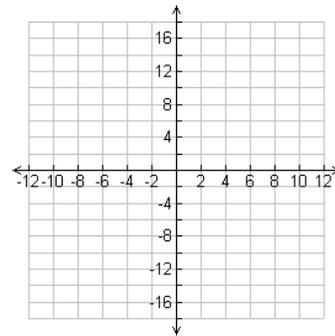how many units up/down?
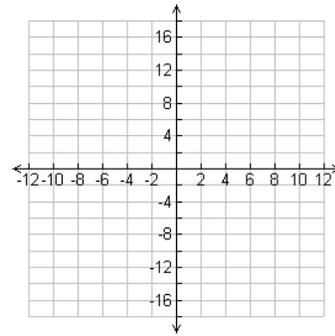
9. Translate the scatter plot into Quadrant 3 by editing the
formula bars for **L3** and **L4**.

    L3 formula: _____

    L4 formula: _____
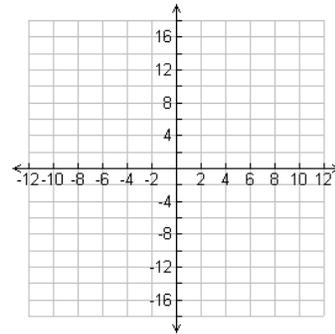
    Explain how the image shifted.

Problem 4 – Dilations

In the list editor, change the formula for **L3** to **=0.5*L1** and the
formula for **L4** to **=0.5*L2**.

Press [graph] to view the scatter plots.

10. Explain what happened to the image.

11. Dilate the scatter plot into Quadrant 3 by editing the formula
bars for **L3** and **L4**.

    L3 formula: _____

    L4 formula: _____

    Explain what happened to the image.