Transformations With Lists

TransformationWithLists.tns

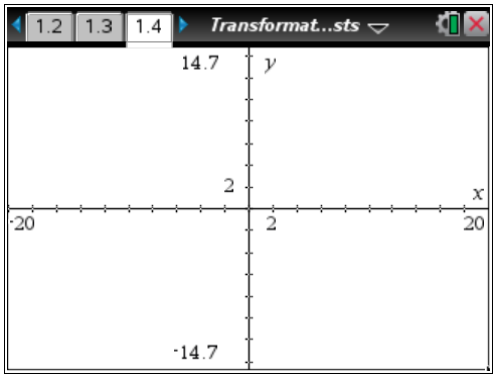
Name _____

Class _____

Problem 1 – Creating a Scatter Plot

Read the directions on page 1.2. On page 1.4, create a scatter plot of **List1** and **List2** from the spreadsheet. Use the **Attributes** tool to select **Points are connected**.

Sketch the graph from page 1.4.

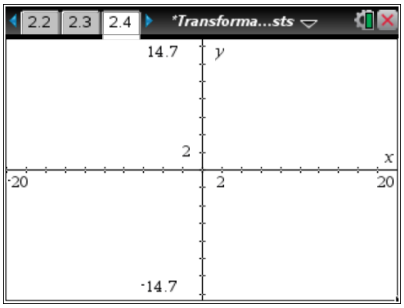


Problem 2 – Reflections and Rotations

On page 2.2, create **list3** with the opposite of all the *x*-values in **list1**. Create **list4** with the opposite of all the *y*-values in **list2**.

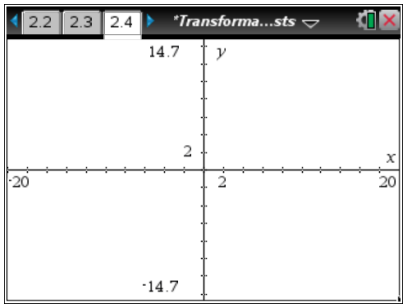
On page 2.4, add the following scatter plots one at a time. Identify the type of *reflection* that occurs for each type of ordered pair.

A: $x \leftarrow$ **list3** and $y \leftarrow$ **list2**



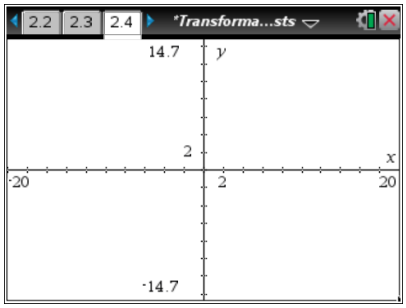
$(-x, y)$ _____

B: $x \leftarrow$ **list1** and $y \leftarrow$ **list4**



$(x, -y)$ _____

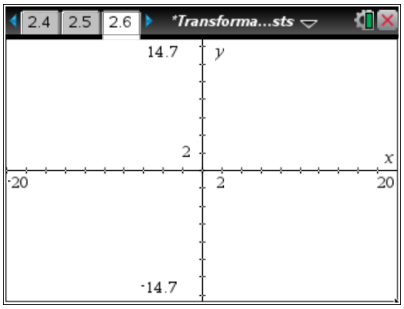
C: $x \leftarrow$ **list2** and $y \leftarrow$ **list1**



(y, x) _____

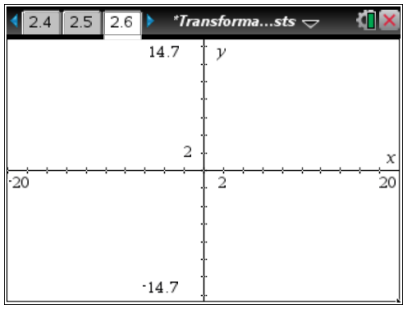
On page 2.6, add the following scatter plots one at a time. Identify the type of *rotation* that occurs for each type of ordered pair.

D: $x \leftarrow$ **list4** and $y \leftarrow$ **list1**



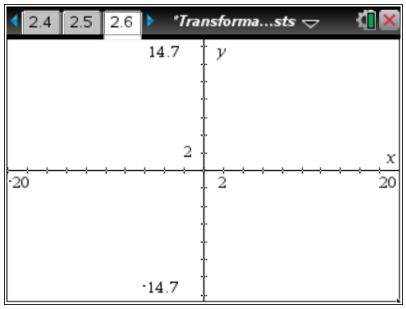
$(-y, x)$ _____

E: $x \leftarrow$ **list2** and $y \leftarrow$ **list3**



$(y, -x)$ _____

F: $x \leftarrow$ **list3** and $y \leftarrow$ **list4**



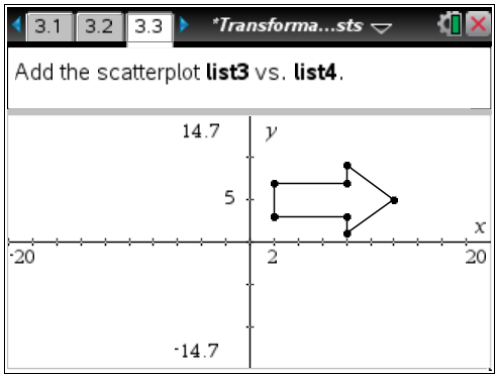
$(-x, -y)$ _____

Problem 3 – Translations

On page 3.2, enter the following formulas to translate the scatter plot on page 3.3.

list3: =list1–5 **list4: =list2+3**

Where did the image shift? How many units left/right and how many units up/down?

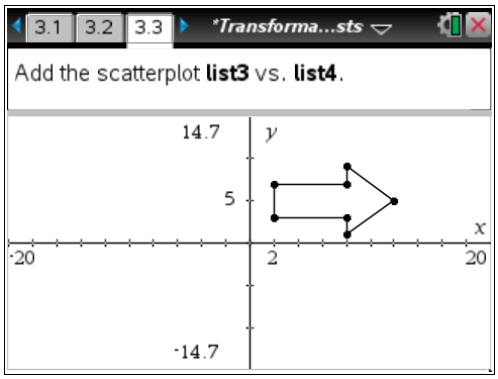


Translate the scatter plot into Quadrant 3 by editing the formula bars for **list3** and **list4**.

list3 formula: _____

list4 formula: _____

Explain how the image shifted:

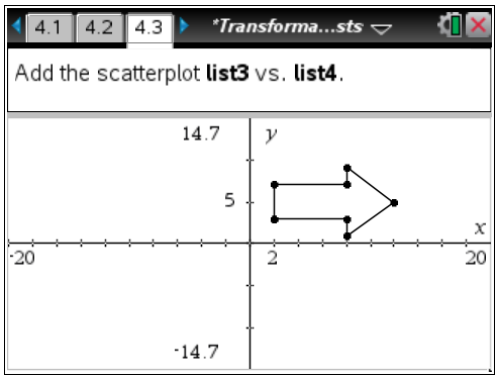


Problem 4 – Dilations

On page 4.2, enter the following formulas to dilate the scatter plot on page 4.3.

list3: =0.5*list1 **list4: =0.5*list2**

Explain what happened to the image.



Dilate the scatter plot into Quadrant 3 by editing the formula bars for **list3** and **list4**.

list3 formula: _____

list4 formula: _____

Explain what happened to the image.