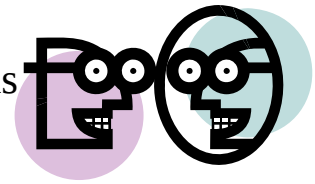
Investigating Transformations  Name_____

Transformations.gsp

Dilations:

1. Open the Geometer's Sketchpad file *Transformations.gsp*. Access the fourth section on Dilations (or choose the tab "Dilate" at the bottom of the page).

2. Click on "**Show Dilation Factor 0.5**". What happens to the coordinates of the vertices of the triangle after a dilation of factor 0.5?_____
_____

3. Grab any point and drag it around the screen. Does your hypothesis regarding the coordinates still hold true when a new figure is formed?_____

4. Generalize your hypothesis into a rule that will illustrate the changes in the coordinates?

Dilation: $D_{0.5}(x, y) \rightarrow (\quad , \quad)$

5. Highlight one of the sides of the original triangle. Choose **MEASURE** from the toolbar at the top of the page. Choose **Length.** The length of the segment will appear on the page. Record this length._____

6. Highlight the corresponding side of the image triangle. Choose **MEASURE, Length**. Record this length. _____

7. Do the sides of a triangle maintain their lengths through a dilation of factor 0.05? _____

8.. Click on "Hide Dilation Factor 0.5." Click on "**Show Dilation Factor 2**". What happens to the coordinates of the vertices of the triangle after a dilation factor of 2? _____
_____

9. Grab any point and drag it around the screen. Does your hypothesis regarding the coordinates still hold true when a new figure is formed?_____

10. Generalize your hypothesis into a rule that will illustrate the changes in the coordinates?

Dilation: $D_{2}(x, y) \rightarrow (\quad , \quad)$

11. Highlight one of the sides of the original triangle. Choose **MEASURE** from the toolbar at the top of the page. Choose **Length.** The length of the segment will appear on the page. Record this length._____

12. Highlight the corresponding side of the image triangle. Choose **MEASURE, Length**. Record this length. _____

13. Do the sides of a triangle maintain their lengths through a dilation of factor 2? _____

14. Click on "Hide Dilation Factor 2." Click on "**Show Dilation Factor -0.5**". What happens to the coordinates of the vertices of the triangle after a dilation factor -0.5? _____
_____

15. Grab any point and drag it around the screen. Does your hypothesis regarding the coordinates still hold true when a new figure is formed?_____

16. Generalize your hypothesis into a rule that will illustrate the changes in the coordinates?

Dilation: $D_{-0.5}(x, y) \rightarrow (\quad , \quad)$

17. Highlight one of the sides of the original triangle. Choose **MEASURE** from the toolbar at the top of the page. Choose **Length.** The length of the segment will appear on the page. Record this length._____

18. Highlight the corresponding side of the image triangle. Choose **MEASURE, Length**. Record this length. _____

19. Do the sides of a triangle maintain their lengths through a dilation of factor -0.5?_____

When you close the program,
do NOT save the changes.

By NOT saving the changes, the program will remain in its original state with the original settings.