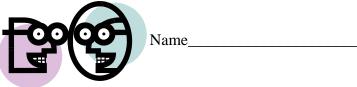
Investigating Transformations Transformations.gsp



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: $D_{0,0.5}(x, y) \rightarrow ($,)

- 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? _____

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- 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: $D_{0,2}(x, y) \rightarrow ($,)

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?
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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: $D_{0,-0.5}(x, y) \rightarrow ($,)
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.

