Dilation Discovery

1. Draw the pre-image triangle with vertices A(-1,2), B(3,2) and C(3,5). Check the algebra pane to make sure you plotted the points correctly. If you didn’t, use the move tool to reposition the point(s) to the correct location(s). Then perform the dilation with center of dilation at C and a scale of 2.

Record the ordered pairs of your image. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Did the image get larger or smaller? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Do the triangles share a common vertex? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Record the segment lengths found in the algebra pane for:

 a \_\_\_\_\_\_\_ b \_\_\_\_\_\_\_c\_\_\_\_\_\_\_

 a’ \_\_\_\_\_\_\_ b’ \_\_\_\_\_\_\_c’ \_\_\_\_\_\_\_

What pattern do you see between the pre-image segments and their images? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Draw the pre-image triangle with vertices A(-2,1), B(2,-5), C(8,3). Remember to check the algebra pane to make sure you plotted the points correctly. Then perform the dilation with center of dilation at A and a scale of 1/2.

Record the ordered pairs of your image. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Did the image get larger or smaller? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Do the triangles share a common vertex? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Record the segment lengths found in the algebra pane for:

 a\_\_\_\_\_\_\_ b \_\_\_\_\_\_\_ c\_\_\_\_\_\_\_

 a’ \_\_\_\_\_\_\_ b’ \_\_\_\_\_\_\_ c’ \_\_\_\_\_\_\_

What pattern do you see between these pre-image segments and their images? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Draw the pre-image triangle with vertices A(0,3), B(3,5), C(4,0). Then perform the dilation with center of dilation at the origin and a scale of 3. (You will first need to plot point D at the origin)

Record the ordered pairs of your image. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Did the image get larger or smaller? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Do the triangles share a common vertex? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Record the segment lengths found in the algebra pane for:

 a\_\_\_\_\_\_\_ b \_\_\_\_\_\_\_ c\_\_\_\_\_\_\_

 a’ \_\_\_\_\_\_\_ b’ \_\_\_\_\_\_\_ c’ \_\_\_\_\_\_\_

What pattern do you see between these pre-image segments and their images? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Make a conjecture about the relationship between the pre-image and its image as it relates to the scale of the dilation. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Make a conjecture about how the center of dilation affects the location of the image. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Suppose triangle RTM is dilated to form R’T’M’. Given the measurements in the table below, finish the table. R\_\_\_10\_\_\_\_ t \_\_\_7\_\_\_\_ m\_\_\_\_ \_\_\_ r’ \_\_\_ 20\_\_\_\_ t’ \_\_\_ \_ \_\_\_ m’ \_\_\_12\_\_\_\_ Scale? \_\_\_\_\_\_\_\_\_\_\_