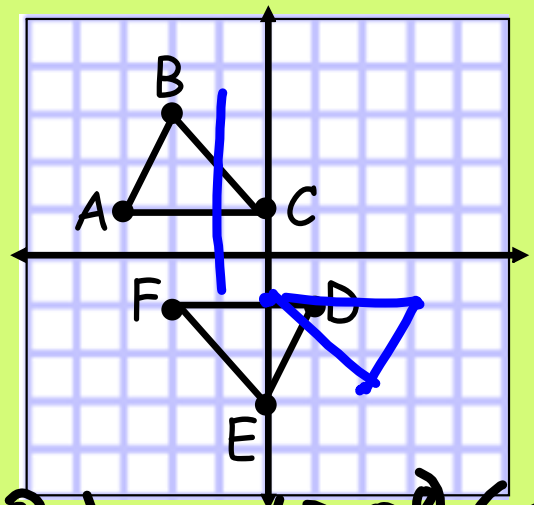
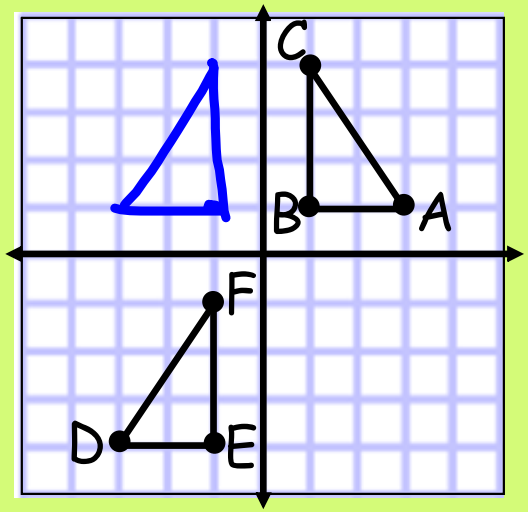
3/3/20 - Warm Up Problem

Write a composition of transformations that would map Triangle ABC onto Triangle DEF

$T_{\langle 0,-5 \rangle}(R_{y\text{-axis}})(\triangle ABC)$





$(T_{\langle 3,0 \rangle} \circ r_{180})(\triangle ABC)$

Concept 22 - Similarity Transformations

Goal: write a composition of transformations to map a figure onto a similar figure

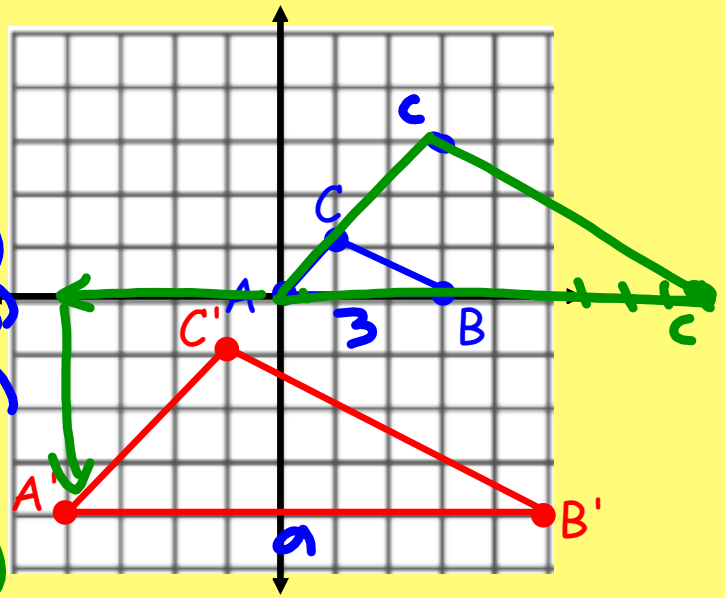
Are these triangles similar?

How can you tell?

$A(0,0) \times 3 = (0,0)$

$C(1,1) \times 3 = (3,3)$

$B(3,0) \times 3 = (9,0)$



$(T_{\angle -45^\circ} D_3)(\Delta ABC)$

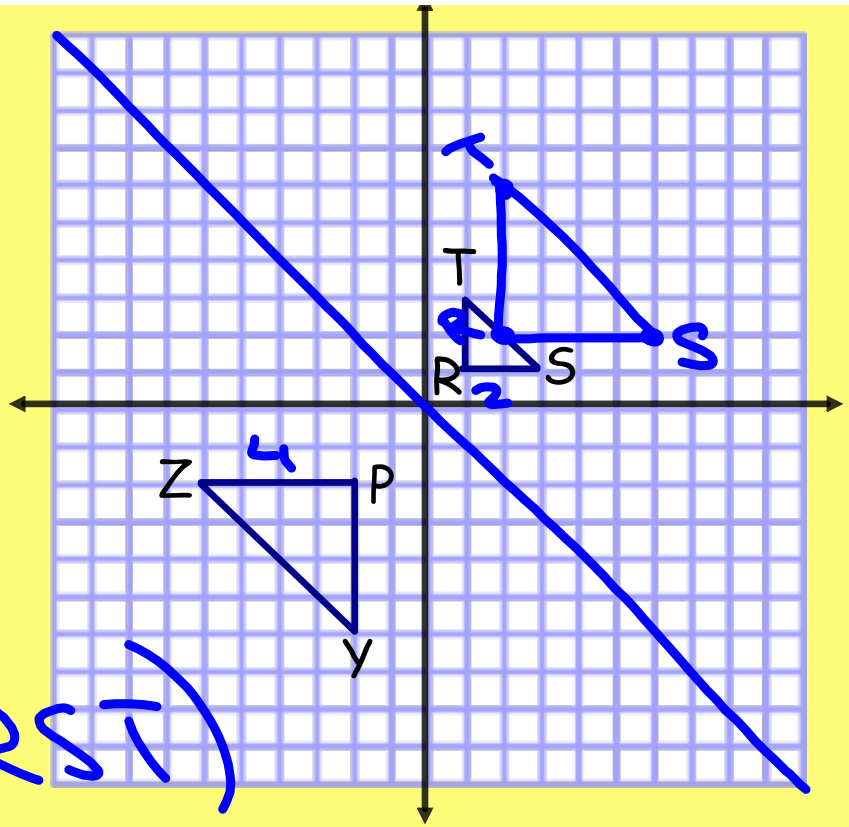
Similarity Transformation: a composition of a dilation and one or more rigid motions

- you can prove two shapes are similar by writing a similarity transformation

Write a composition of transformations to map ΔRST onto ΔPYZ.

Step 1: Dilate the figures to be the same size

Step 2: Move one figure onto the other using translations, rotations, and reflections

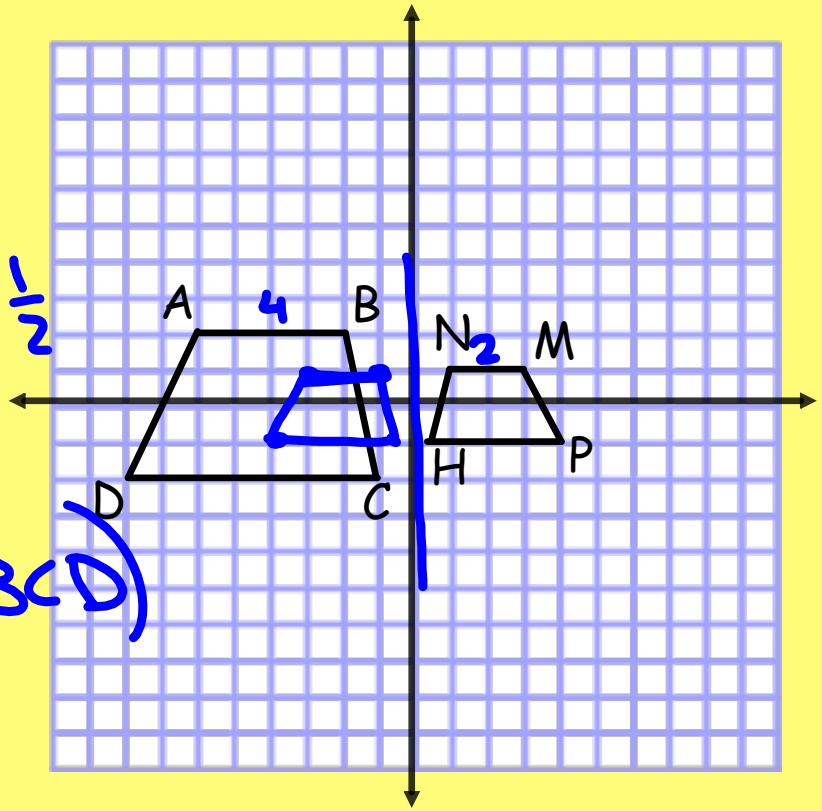


$(R_{y=-x} \circ D_2)(\Delta RST)$

In your notes...

Write a composition of transformations to map ABCD onto MNHP.

$SF = \frac{2}{4} : \frac{1}{2}$



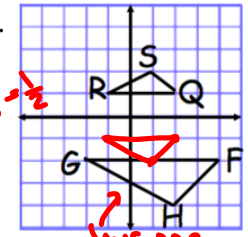
$(R_{y\text{-axis}} \circ D_{\frac{1}{2}})(ABCD)$

Assignment:

finish Concept 22 Worksheet

For each graph, write the composition of transformations that maps ΔFGH to ΔQRS using function notation.

10.

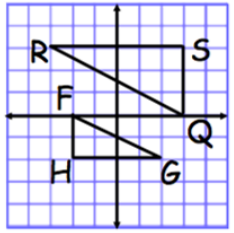


$\frac{3}{6} = \frac{1}{2}$

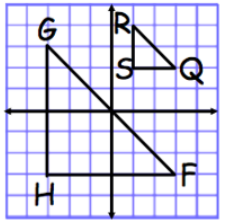
this one

$(R_{x\text{-axis}} \circ D_{\frac{1}{2}})(\Delta FGH)$

11.



12.



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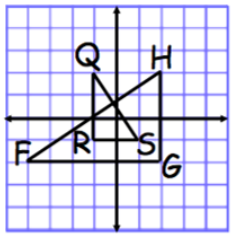
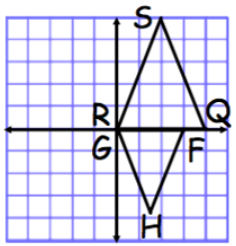


14.



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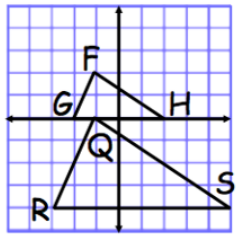


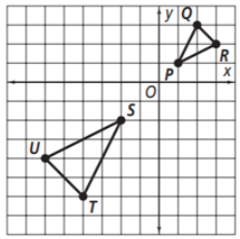
16. Which similarity transformation does not map ΔPQR onto ΔSTU?

a. $(r_{(180°, O)} \circ D_2)(\Delta PQR)$

b. $(D_2 \circ r_{(180°, O)})(\Delta PQR)$

c. $(D_2 \circ R_{x\text{-axis}} \circ R_{y\text{-axis}})(\Delta PQR)$

d. $(D_2 \circ R_{x\text{-axis}} \circ r_{(90°, O)})(\Delta PQR)$



17. The composition $(T_{<2,1>} \circ D_3)$ describes a similarity transformation. If the order of the composition is changed to be $(D_3 \circ T_{<2,1>})$, does that describe the same transformation? Explain.