

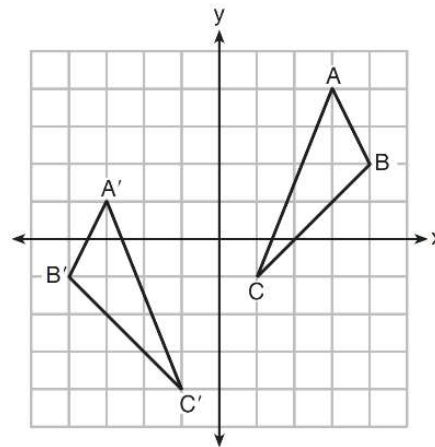
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Date \_\_\_\_\_  
Geometry

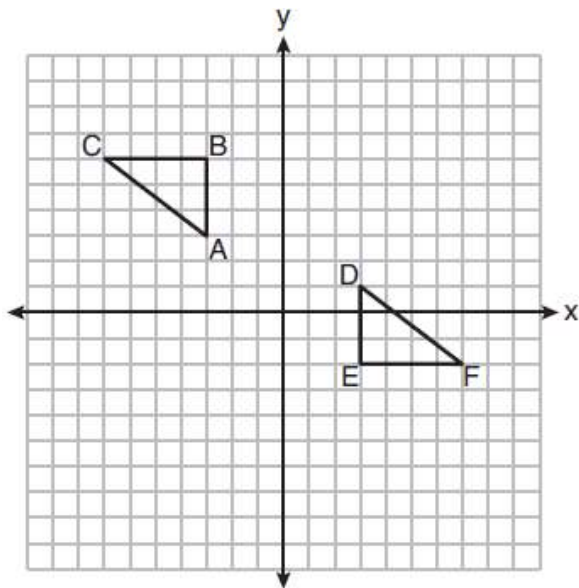
## *Sequences of Rigid Motions on the Grid*

1. As graphed on the set of axes below,  $\triangle A'B'C'$  is the image of  $\triangle ABC$  after a sequence of transformations.

Is  $\triangle A'B'C'$  congruent to  $\triangle ABC$ ? Use the properties of rigid motion to explain your answer.

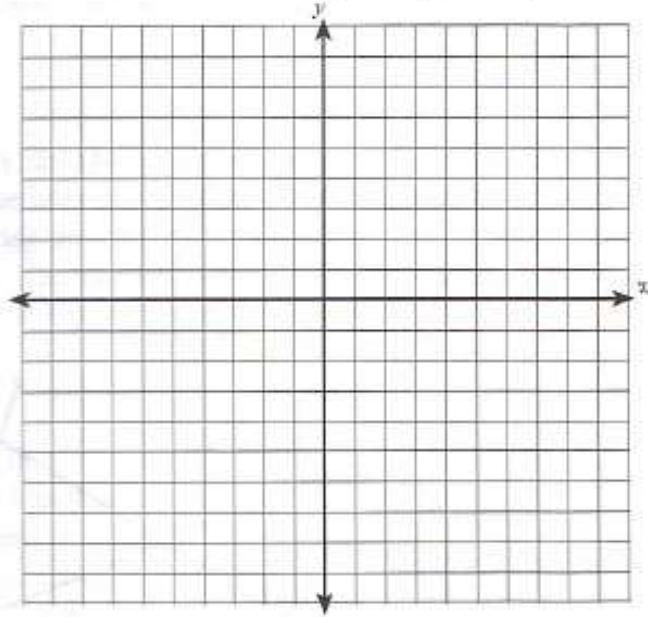


2. On the set of axes below,  $\triangle ABC \cong \triangle DEF$ . Describe a sequence of rigid motions that maps  $\triangle ABC$  onto  $\triangle DEF$ . Are the triangles congruent? Explain your answer.

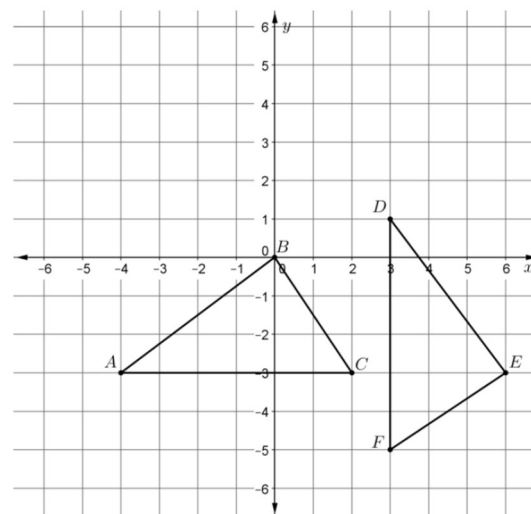


3.

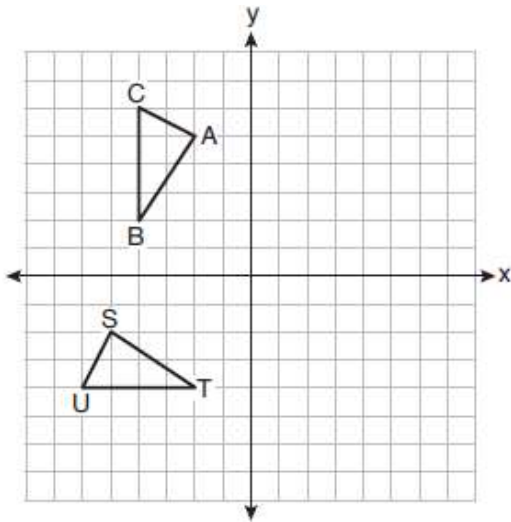
A set of transformations mapped  $\triangle LMN$  from the coordinates of  $L(2, 3)$ ,  $M(6, 0)$ , and  $N(-1, -1)$  to the new coordinates of  $L''(-4, 2)$ ,  $M''(-8, -1)$ , and  $N''(-1, -2)$ . Give an ordered list of transformations that would produce  $\triangle L''M''N''$  from  $\triangle LMN$ .  
[The use of the grid is optional.]



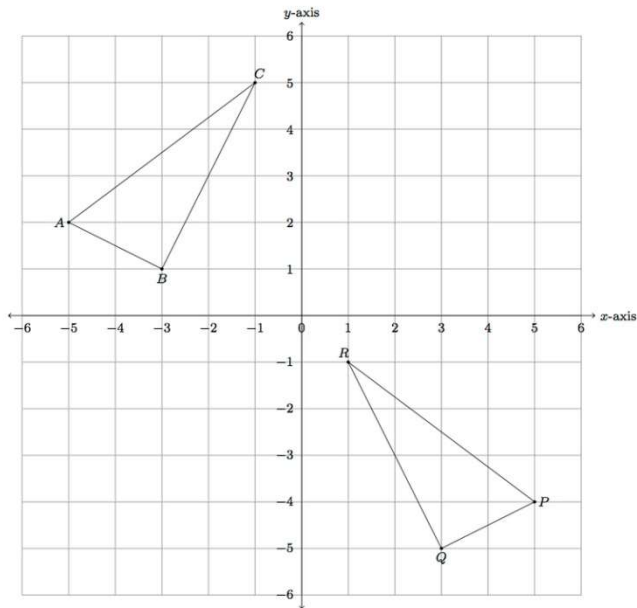
4. The graph below shows  $\triangle ABC$  with  $A(-4, -3)$ ,  $B(0, 0)$ , and  $C(2, -3)$  and  $\triangle DEF$  with  $D(3, 1)$ ,  $E(6, -3)$ , and  $F(3, -5)$ . Determine a sequence of rigid motions that will map  $\triangle DEF$  onto  $\triangle ABC$ .



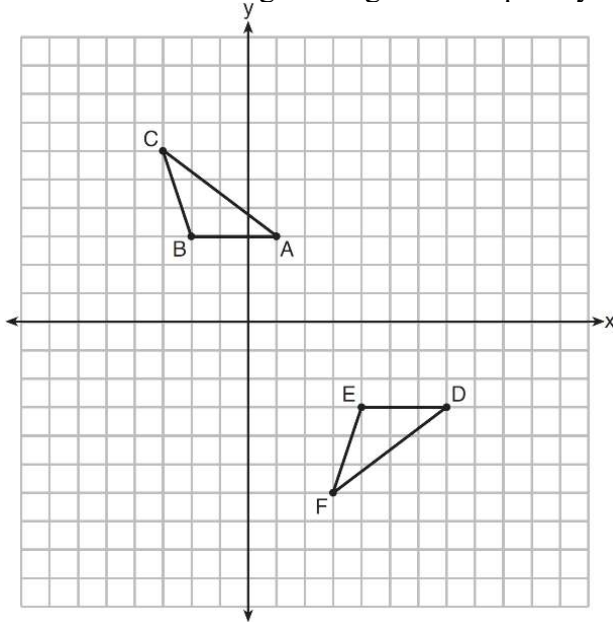
5. On the set of axes below,  $\triangle ABC \cong \triangle STU$ . Describe a sequence of rigid motions that maps  $\triangle ABC$  onto  $\triangle STU$ . Are the triangles congruent? Explain your answer.



6. In the diagram below,  $\triangle ABC$  and  $\triangle PQR$  are graphed. Is  $\triangle ABC \cong \triangle PQR$ ? Justify your answer.



7. Describe a sequence of transformations that will map  $\triangle ABC$  onto  $\triangle DEF$  as shown below. Are the triangles congruent? Explain your answer.



8. On the set of axes below,  $\triangle ABC$  is graphed with coordinates  $A(-2, -1)$ ,  $B(3, -1)$ , and  $C(-2, -4)$ . Triangle  $QRS$ , the image of  $\triangle ABC$ , is graphed with coordinates  $Q(-5, 2)$ ,  $R(-5, 7)$ , and  $S(-8, 2)$ .

Describe a sequence of transformations that would map  $\triangle ABC$  onto  $\triangle QRS$ . Are the triangles congruent? Explain your answer.

