

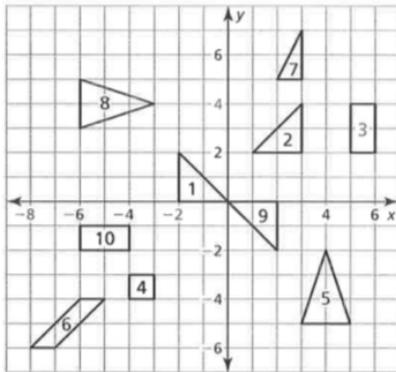
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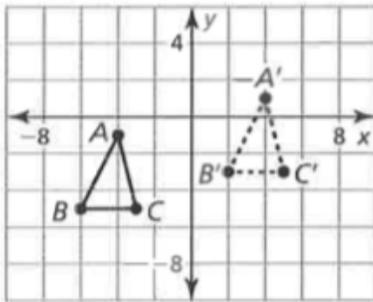
Hour:

Advanced Geometry  
WS PC #2 Unit 4 Review

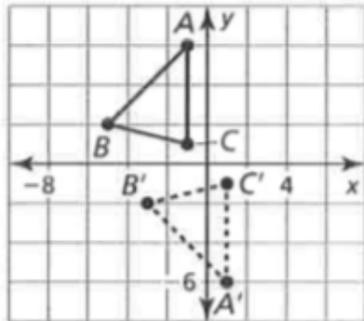
1. Identify any congruent figures on the coordinate plane. Explain.



2. Describe the congruence transformation that maps  $\triangle ABC$  to  $\triangle A'B'C'$ .



3. Describe the congruence transformation that maps  $\triangle ABC$  to  $\triangle A'B'C'$ .



Determine whether the polygons with the given vertices are congruent. Use transformations to explain your reasoning.

4.  $A(5, 2), B(2, 2), C(2, 7)$  and  $S(-4, -5), T(-1, -5), U(-1, 0)$

5.  $E(6, -2), F(10, -2), G(10, -8), H(6, -8)$  and  $W(4, 8), X(4, 10), Y(8, 10), Z(8, 8)$

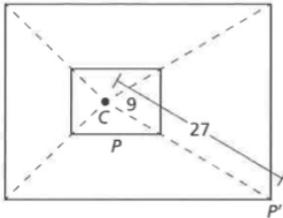
6. Find the measure of the acute or right angle formed by intersecting lines so that P can be mapped to P'' using two reflections.

a. A rotation of  $28^\circ$  maps P to P''

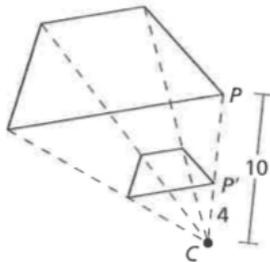
b. The rotation  $(x, y) \rightarrow (-y, x)$  maps P to P''.

Find the scale factor of the dilation. Then tell whether the dilation is a reduction or an enlargement.

7.



8.



Using the polygons listed below, find the coordinates of the image after a dilation with a scale factor  $k$ .

9.  $P(1, 2), Q(2, 2), R(4, -2), S(-1, -3); k = 2$

10.  $A(-4, 4), B(-2, 6), C(1, -1), D(-2, -4); k = -75\%$

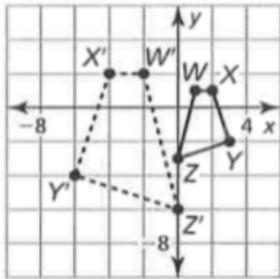
11. A standard piece of paper is 8.5 inches by 11 inches. A piece of legal-size paper is 8.5 inches by 14 inches. By what scale factor  $k$  would you need to dilate the standard paper so that you could fit two pages on a single piece of legal paper?

Using  $\triangle PQR$  with vertices  $P(-1, 5)$ ,  $Q(-4, 3)$ ,  $R(-2, 1)$ , find the coordinates of its image after the similarity transformation.

12. Rotation:  $180^\circ$  about the origin  
 Dilation:  $(x, y) \rightarrow (2x, 2y)$

13. Dilation:  $(x, y) \rightarrow (\frac{1}{2}x, \frac{1}{2}y)$   
 Reflection: in the x-axis

14. Describe a similarity transformation that maps the black preimage onto the dashed image.



Determine whether the polygons with the given vertices are similar. Use transformations to explain your reasoning.

15.  $A(-2, 5)$ ,  $B(-2, 2)$ ,  $C(-1, 2)$  and  $D(3, 3)$ ,  $E(3, 1)$ ,  $F(2, 1)$

16.  $J(-5, -3)$ ,  $K(-3, -1)$ ,  $L(-3, -5)$ ,  $M(-5, -5)$  and  $T(3, 3)$ ,  $U(4, 3)$ ,  $V(4, 2)$ ,  $W(3, 1)$