Geometry Name _____ Hour ___

9.5 Dilations (do this on your own paper)

Find the measure of the dilation image or the preimage of $\overline{ST}$ using the given scale factor.

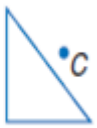
10. $ST = 6, r = -1$ **11.** $ST = \frac{4}{5}, r = \frac{3}{4}$ **12.** $S'T' = 12, r = \frac{2}{3}$

COORDINATE GEOMETRY Find the image of each polygon, given the vertices, after a dilation centered at the origin with a scale factor of 2. Then graph a dilation centered at the origin with a scale factor of $\frac{1}{2}$.

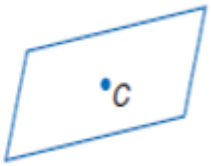
16. $F(3, 4), G(6, 10), H(-3, 5)$

Draw the dilation image of each figure with center C and given scale factor.

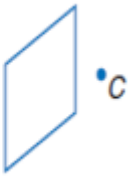
20. $r = 3$



22. $r = \frac{1}{2}$

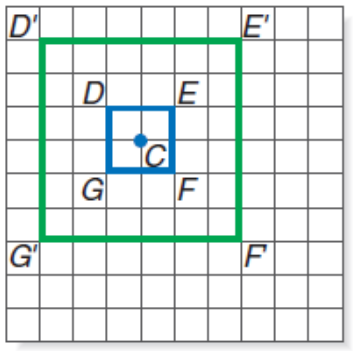


24. $r = -1$



Determine the scale factor

26.



34. MODELS Etay is building a model of the SR-71 Blackbird. If the wingspan of his model is 14 inches, what is the scale factor of the model?

Real-World Link

The SR-71 Blackbird is 107 feet 5 inches long with a wingspan of 55 feet 7 inches and can fly at speeds over 2200 miles per hour. It can fly nonstop from Los Angeles to Washington, D.C., in just over an hour, while a standard commercial jet takes about five hours to complete the trip.

Source: NASA

DIGITAL PHOTOGRAPHY For Exercises 39–41, use the following information.

Dinah is editing a digital photograph that is 640 pixels wide and 480 pixels high on her monitor.

39. If Dinah zooms the image on her monitor 150%, what are the dimensions of the image?

40. Suppose that Dinah wishes to use the photograph on a Web page and wants the image to be 32 pixels wide. What scale factor should she use?