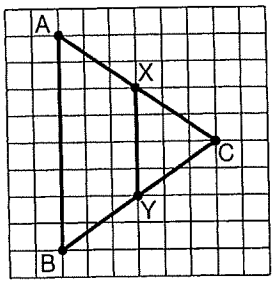
NAME _____ DATE _____ PERIOD ____

9-5 Study Guide and Intervention *(continued)*

Dilations

Identify the Scale Factor If you know corresponding measurements for a preimage and its dilation image, you can find the scale factor.

Example **Determine the scale factor for the dilation of $\overline{XY}$ to $\overline{AB}$. Determine whether the dilation is an *enlargement*, *reduction*, or *congruence transformation*.**



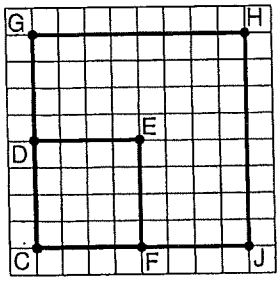
$$\text{scale factor} = \frac{\text{image length}}{\text{preimage length}}$$
$$= \frac{8 \text{ units}}{4 \text{ units}}$$
$$= 2$$

The scale factor is greater than 1, so the dilation is an enlargement.

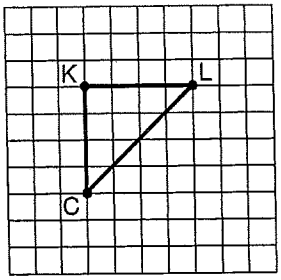
Exercises

Determine the scale factor for each dilation with center C. Determine whether the dilation is an *enlargement*, *reduction*, or *congruence transformation*.

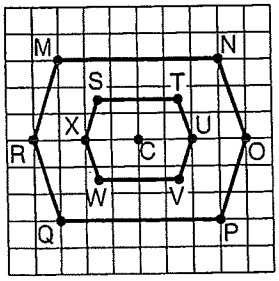
1. $CGHJ$ is a dilation image of $CDEF$.



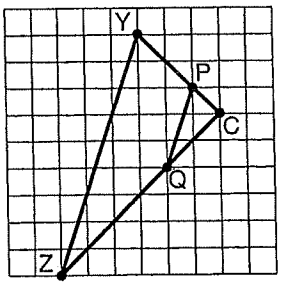
2. $\triangle CKL$ is a dilation image of $\triangle CKL$.



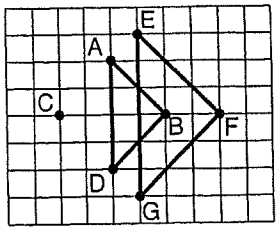
3. $STUVWX$ is a dilation image of $MNOPQR$.



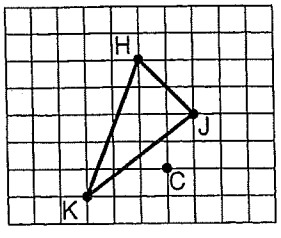
4. $\triangle CPQ$ is a dilation image of $\triangle CYZ$.



5. $\triangle EFG$ is a dilation image of $\triangle ABC$.

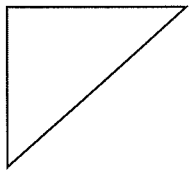


6. $\triangle HJK$ is a dilation image of $\triangle HJK$.



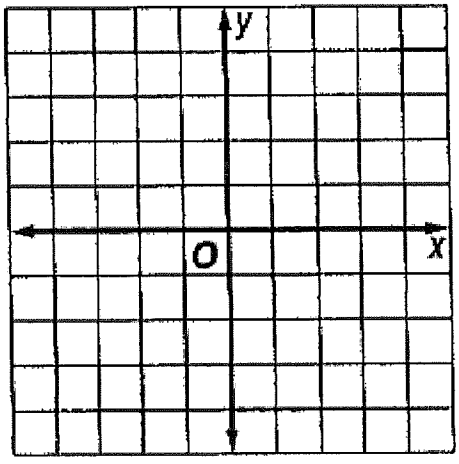
Dilations: Construct **Name:**_____

Draw the dilation image with center C and a scale factor of 2, 3, and 1/2 .



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 $\frac{1}{2}$.**

$D(-2, 0), G(0, 2), F(2, -2)$



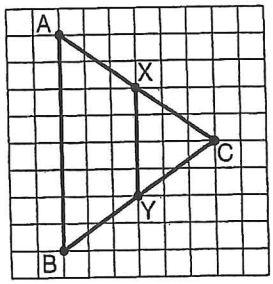
NAME Key DATE _____ PERIOD ____

9-5 Study Guide and Intervention *(continued)*

Dilations

Identify the Scale Factor If you know corresponding measurements for a preimage and its dilation image, you can find the scale factor.

Example **Determine the scale factor for the dilation of $\overline{XY}$ to $\overline{AB}$. Determine whether the dilation is an *enlargement*, *reduction*, or *congruence transformation*.**



$$\text{scale factor} = \frac{\text{image length}}{\text{preimage length}}$$
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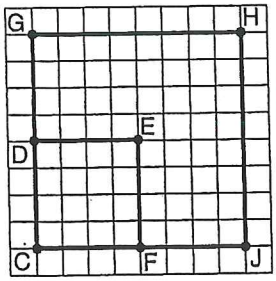
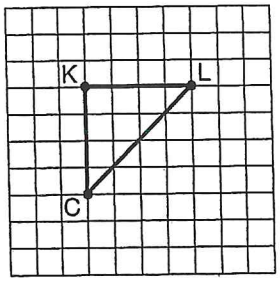


2 = SF

enlargement

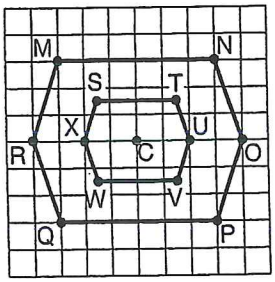
2. $\triangle CKL$ is a dilation image of $\triangle CKL$.



SF = $\frac{1}{1}$ = 1 = SF

≅ transformation

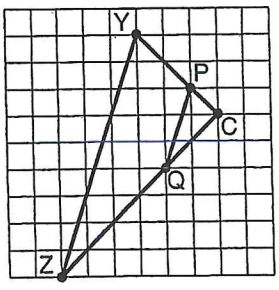
3. $STUVWX$ is a dilation image of $MNOPQR$.



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

Reduction

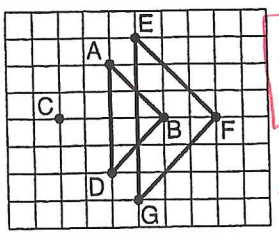
4. $\triangle CPQ$ is a dilation image of $\triangle CYZ$.



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

reduction

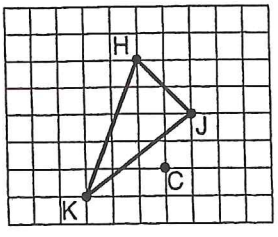
5. $\triangle EFG$ is a dilation image of $\triangle ABC$.



$\frac{3}{2} = SF$

enlargement

6. $\triangle HJK$ is a dilation image of $\triangle HJK$.



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

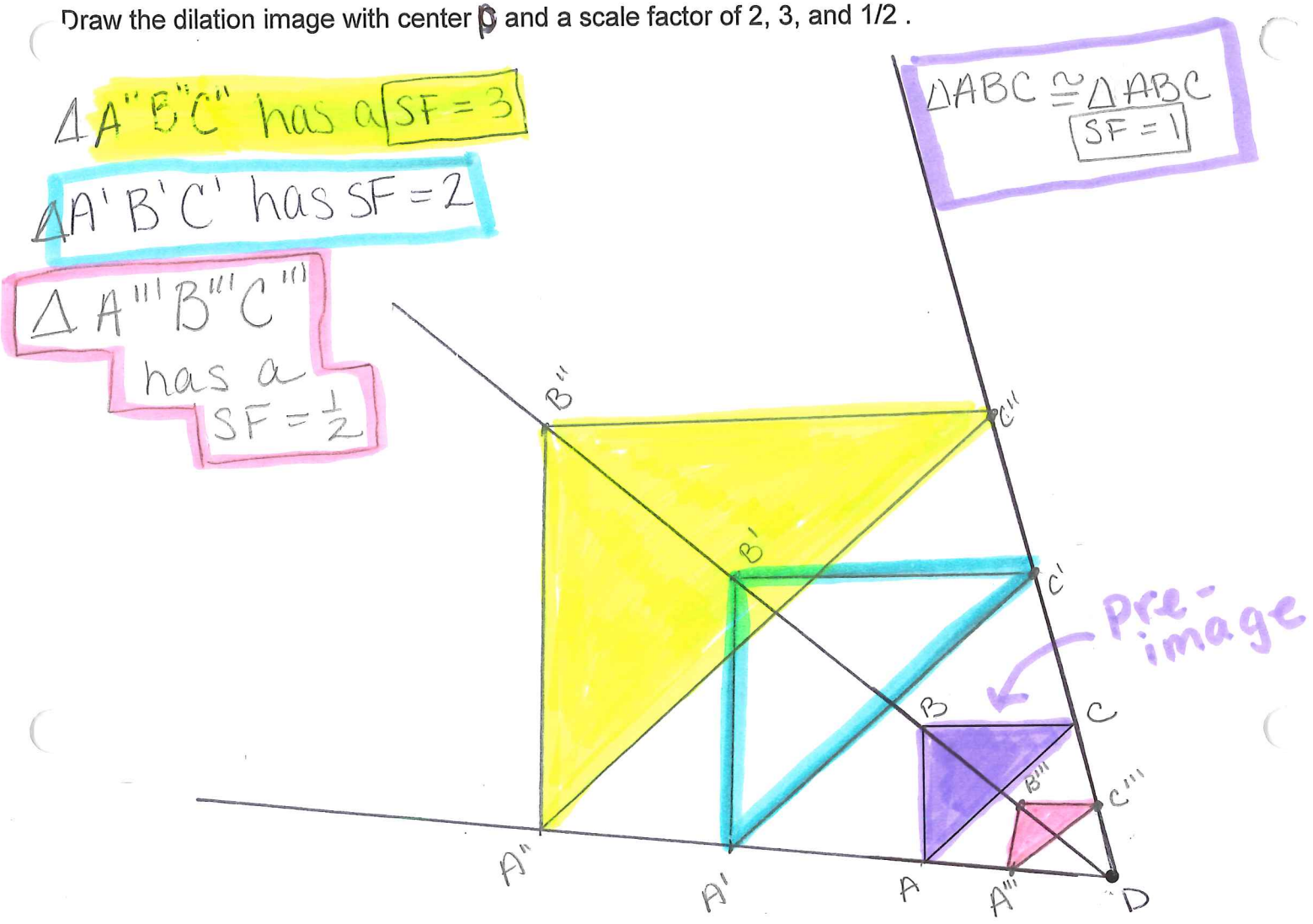
SF = 1

≅

Lesson 9-5

Dilations: Construct Name:_____

Draw the dilation image with center O and a scale factor of 2, 3, and 1/2 .



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$D(-2, 0), G(0, 2), F(2, -2)$