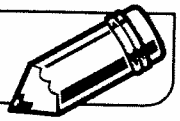
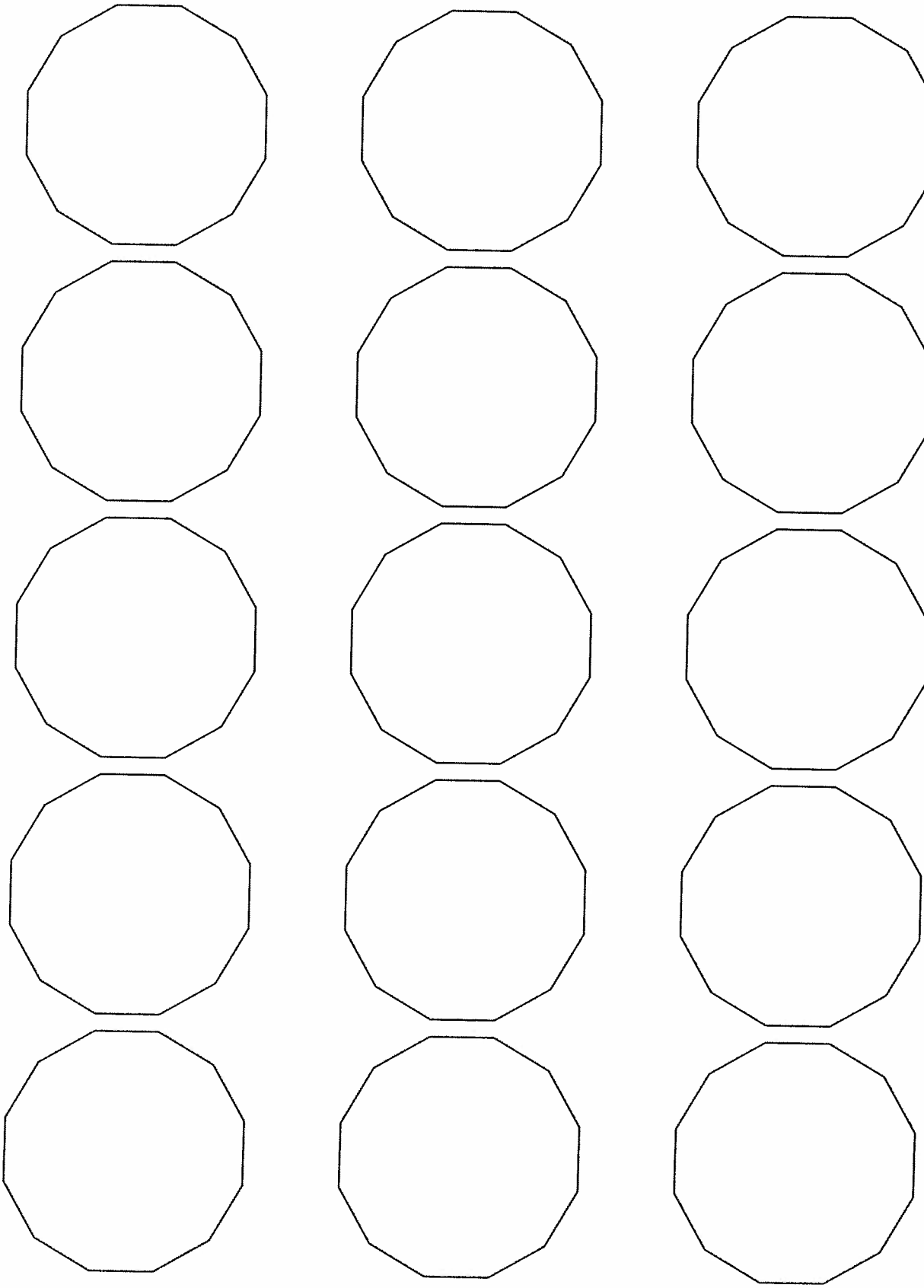
Name Date Time

LESSON 10•1

Regular Dodecagon Templates



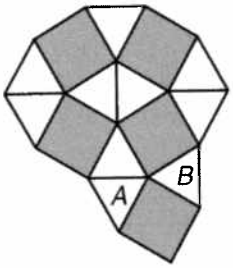


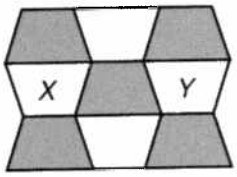
Name Date Time

STUDY LINK 10•1

Tessellation Exploration

SRB 180 181 357 358





1. What transformation would move Figure *A* onto Figure *B*?

_____

2. What transformation would move Figure *X* onto Figure *Y*?

_____

3. Pick one or more polygons from the Geometry Template that you know will tessellate. In the space provided below, draw a tessellation made up of the polygon(s).

4. Tell whether the tessellation you drew is regular or semiregular. Explain how you know.

_____

_____

Practice

5. 5.67 * 20.2 _____

6. 443.6 * 0.08 _____

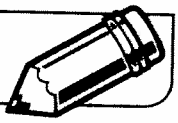
7. 6.76 * 0.005 _____

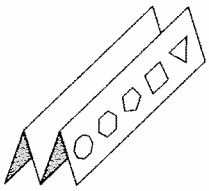
8. 14.09 * 2.25 _____

Name Date Time

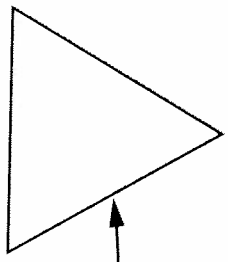
LESSON 10•1

Regular Polygons

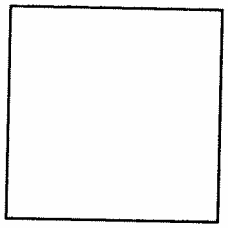


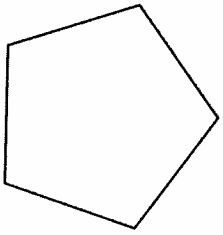


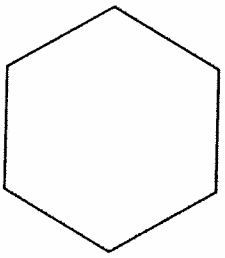
Fold the page like this and then cut out four shapes at a time.

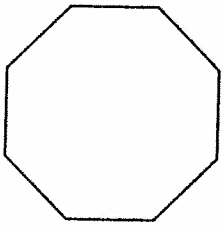


Cut on the lines.







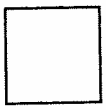
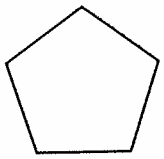
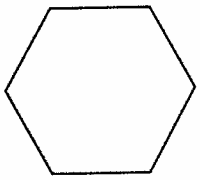
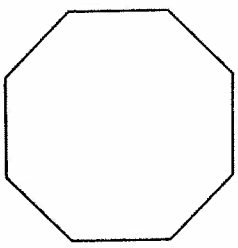


Name Date Time

LESSON 10•1

Same-Tile Tessellations

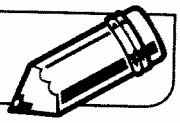
Decide whether each polygon can be used to create a same-tile tessellation. Write the name of the polygon. Then record your answers in Column A. In Column B, use your Geometry Template to draw examples illustrating your answers in Column A.

Polygon	A. Tessellation? (Yes or No)	B. Draw an example.
 _____		
 _____		
 _____		
 _____		
 _____		

Name Date Time

LESSON 10•1

Investigating Same-Tile Tessellations



1. After you complete *Math Masters,* page 332, fill in the table below. Use your results from Column D to complete Column E.

Regular Polygon	Number of Sides (n)	C. Sum of interior angle measures $180 * (n - 2)$	D. Measure of one angle	E. Factor of 360°? (from Column D)
Example: Equilateral triangle 	3	$180° * (3 - 2) =$ $180° * 1 = 180°$	$\frac{180°}{3} = 60°$	Yes. 60° is a factor of 360°.
Square 				
Regular pentagon 				
Regular hexagon 				
Regular octagon 				

2. Compare your results from Column A of the table on *Math Masters,* page 332 to Column E of the table above. What can you conclude about the relationship between a regular polygon's interior angle measurements and its ability to tessellate?

3. A regular dodecagon has 12 sides. Can you use a regular dodecagon to create a same-tile tessellation? Explain.

Name Date Time

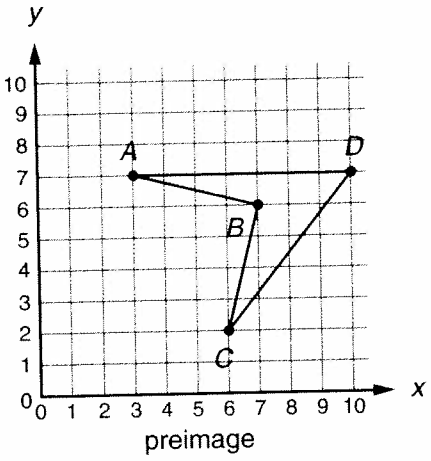
STUDY LINK 10•2

Translations

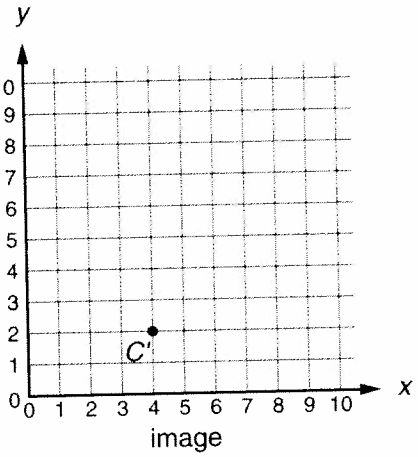
SRB 180 181

Plot and label the vertices of the image that would result from each translation.
One vertex of each image has already been plotted and labeled.

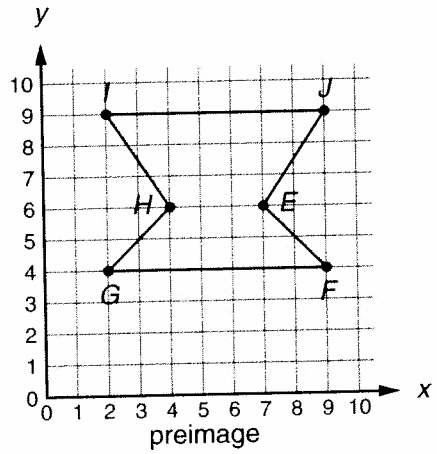
1.



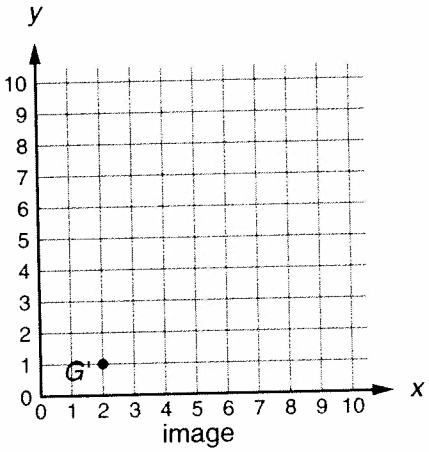
horizontal translation ←



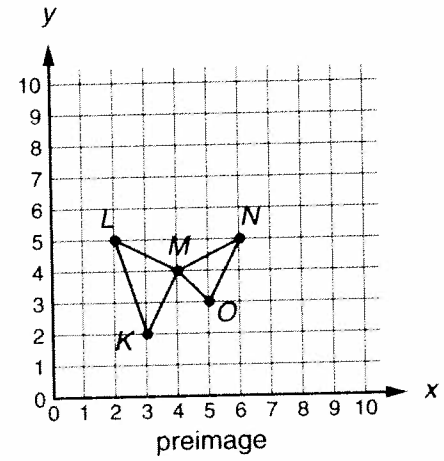
2.



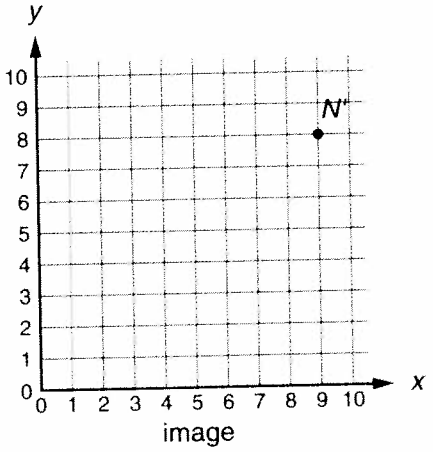
vertical translation ↓



3.



diagonal translation ↗



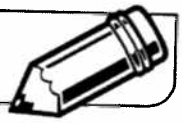
Practice

4. $\frac{25.6}{32}$ _____ **5.** $\frac{102.4}{64}$ _____ **6.** $\frac{41.83}{4.7}$ _____ **7.** $\frac{67.32}{13.2}$ _____

Name _____ Date _____ Time _____

LESSON 10•2

An Angle Investigation



Do all convex quadrangles tessellate? (A convex quadrangle is one in which all vertices are pushed outward.) To find out, do the following:

1. Draw a convex quadrangle on a piece of cardstock paper.

2. Measure the angles of your quadrangle. Write the measure of each angle on the angle.

3. Find the sum of the angles. Write the sum of the angles on your quadrangle.

4. Cut out your quadrangle and try to make a tessellation by tracing your quadrangle repeatedly. Draw your tessellation in the space provided below or on the back of this page.
   (*Hint:* Label your angles *A*, *B*, *C*, and *D* so you can be sure that all four angles meet at each vertex.)

5. Repeat Steps 1–4 for a different convex quadrangle. Try to tessellate your second quadrangle. Draw your tessellation on the back of this page.

6. Do both of your quadrangles tessellate? _____

7. Do you think that all convex quadrangles will tessellate? _____

   Why or why not? _____

Name Date Time

LESSON 10·3

Rotation Symmetry

Use the square below to show the original position of Square *ABCD*.