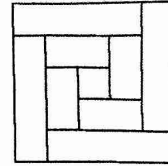
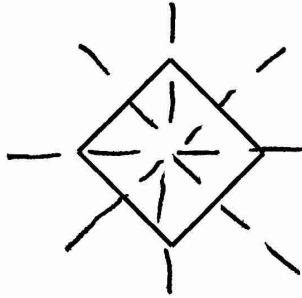
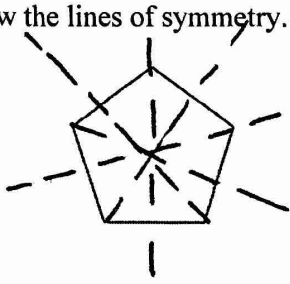


Chapter 3 Test Review

Name: _____ Period: _____

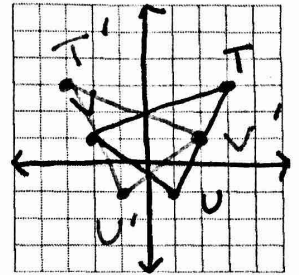
Show all work. Put answers in your notebook.

1. Draw the lines of symmetry.



2. a) Graph $\triangle TUV$ with vertices $T(3, 3)$, $U(1, -1)$, and $V(-2, 1)$. Then graph the image of $\triangle TUV$ reflected over the y -axis and write the rule.

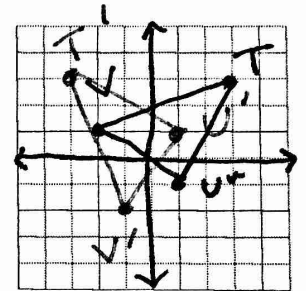
$$R_{y\text{-axis}}(\triangle TUV) = \triangle T'U'V'$$



2. b) Graph $\triangle TUV$ with vertices $T(3, 3)$, $U(1, -1)$, and $V(-2, 1)$. Then graph the image of $\triangle TUV$ rotated 90° about the axis and write the rule.

$$r_{(90,0)}(\triangle TUV) = \triangle T'U'V'$$

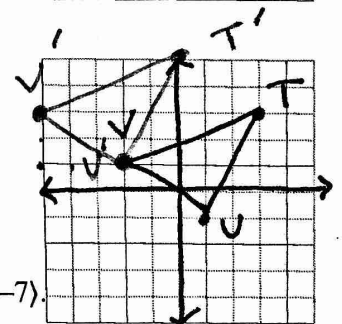
$(-y, x)$
 $T'(-3, 3)$
 $U'(1, 1)$
 $V'(-1, -2)$



2. c) Graph $\triangle TUV$ with vertices $T(3, 3)$, $U(1, -1)$, and $V(-2, 1)$. Then graph the image of $\triangle TUV$ shifted left 3 and up 2 and write the rule.

$$\overline{T}(\triangle TUV) = \triangle T'U'V'$$

$\langle -3, 2 \rangle$



3. Find the preimage of $\overline{C'D'}$ with $C'(4, 6)$ and $D'(-1, 2)$ along the translation vector $\langle 3, -7 \rangle$.

$$C(1, 13) \quad D(-4, 9)$$

4. Identify the rotational symmetry of the following shapes:

- a) equilateral triangle **yes, $120^\circ, 240^\circ$**
- b) square **yes, $90^\circ, 180^\circ, 270^\circ$**
- c) regular pentagon **yes, $72^\circ, 144^\circ, 216^\circ, 288^\circ$**
- d) regular hexagon **yes, $60^\circ, 120^\circ, 180^\circ, 240^\circ, 300^\circ$**
- e) regular octagon **yes, $45^\circ, 90^\circ, 135^\circ, 180^\circ, 225^\circ, 270^\circ, 315^\circ$**
- f) regular 20-gon **yes, $18^\circ, 36^\circ, 54^\circ, 72^\circ, 90^\circ, 108^\circ, 126^\circ, 144^\circ, 162^\circ, 180^\circ, 198^\circ, 216^\circ, 234^\circ, 252^\circ, 270^\circ, 288^\circ, 306^\circ, 324^\circ, 342^\circ$**

7. Triangle RST with $R(5, 3)$, $S(7, 8)$, and $T(10, 1)$ is reflected in the line $y = x$ and then in the x -axis. Find the coordinates of the image.

$$R'(3, 5) \quad S'(8, 7) \quad T'(1, 10)$$

$$R''(3, -5) \quad S''(8, -7) \quad T''(1, -10)$$

8. Triangle ABC is rotated 180° about the origin. The vertices of the rotated triangle are $A'(4, 4)$, $B'(1, 2)$, $C'(3, 1)$. What are the coordinates of triangle ABC ?

$$A(-4, -4) \quad B(-1, -2) \quad C(-3, -1)$$

9. Draw a figure that has line symmetry but no rotational symmetry.



10. Name the image of $R(-3, -4)$ under a reflection in the line $y = x$. $R'(-4, -3)$

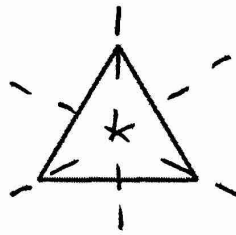
For Questions 11 and 12, use the figure to the right.

11. Does the figure appear to have line symmetry?

If so, how many. yes, 3

12. Does the figure have rotational symmetry?

If so, state the degree. yes, ~~120~~ 120°, 240°



13. Determine the coordinates of the preimage given the image: $G''(-8, 6)$ and composition of transformations:

reflection in the y -axis, translation 1 unit left, rotation 90° counterclockwise about origin.

$90^\circ \rightarrow (-y, x)$ $G''(-8, 6)$ $G'(-7, 8)$ $G(-7, +8)$

14. Name the series of reflections that would result in the same image as a figure rotated 180° about the origin.

Reflect x -axis and reflect y -axis OR $R_{x\text{-axis}} \cdot R_{y\text{-axis}}$

15. Point P with coordinate $(-4, 1)$ is translated to $P'(0, 4)$.

What is the translation? Write the rule.

Right 4, up 3

$T_{\langle +4, +3 \rangle} P = P'$