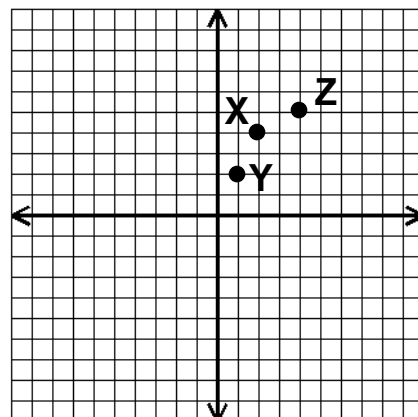


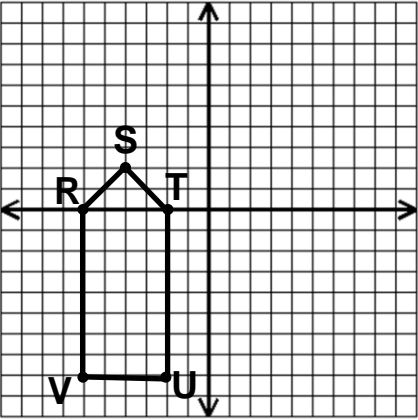
NAME _____ DATE _____ PER. _____

REVIEW #20: TRANSFORMATIONS**PART 1: TRANSLATIONS** – Use the graph below to translate each point as indicated, then state its new coordinates.

1. $X'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$	What is the image of X under the translation that shifts (x, y) to $(x + 6, y)$?
2. $Y'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$	What is the image of Y under the translation that shifts (x, y) to $(x, y - 2)$?
3. $Z'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$	What is the image of Z under the translation that shifts (x, y) to $(x - 5, y - 5)$?

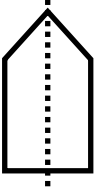
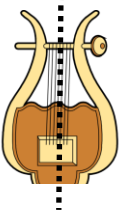

**Answer each problem as indicated. DRAW images when appropriate.**

<p>4. $A'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$</p> <p>$B'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$</p> <p>$C'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$</p> <p>$D'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$</p> <p>$E'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$</p> <p>$F'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$</p> <p>$G'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$</p> <p>$H'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$</p>	<p>Translate (x, y) to $(x + 5, y - 2)$.</p>
5. _____	<p>If the figure in problem 4 above is translated so that H maps onto its image $H'(-6, -2)$, what is the image of any point in the figure under the translation? Write the answer as an ordered pair translation.</p>

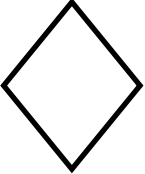

<p>6. R' (_____, _____)</p> <p>S' (_____, _____)</p> <p>T' (_____, _____)</p> <p>U' (_____, _____)</p> <p>V' (_____, _____)</p>	<p>Translate 2 units up and 6 units right.</p> 
<p>7.</p> <p>\overline{TU}: _____</p> <p>$\overline{V'U'}$: _____</p> <p>Lines are: _____</p>	<p>Using the figure(s) in problem 6 above, find the equations of the lines containing \overline{TU} and $\overline{V'U'}$. Tell whether the lines are parallel, perpendicular, or neither.</p>


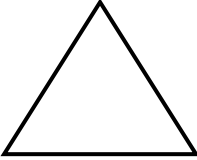
PART 2: REFLECTIONS

Determine if each dotted line is a line of symmetry. Circle YES or NO.

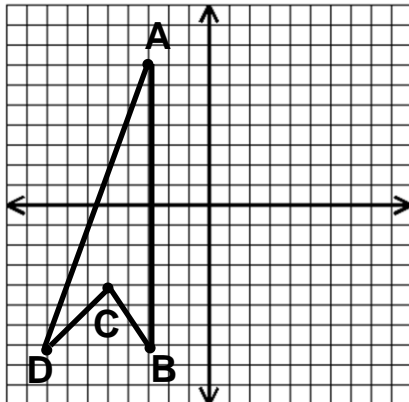
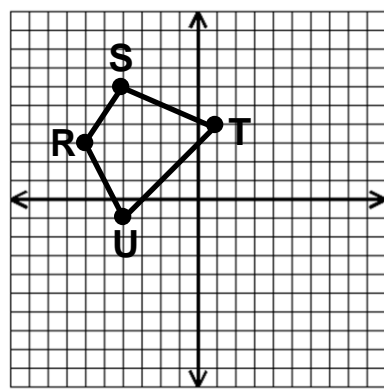
<p>8.</p>  <p>YES or NO</p>	<p>9.</p>  <p>YES or NO</p>	<p>10.</p>  <p>YES or NO</p>
--	--	---

Draw all lines of symmetry, list the total number of lines in the blank provided, & state if the figure would have rotational symmetry.

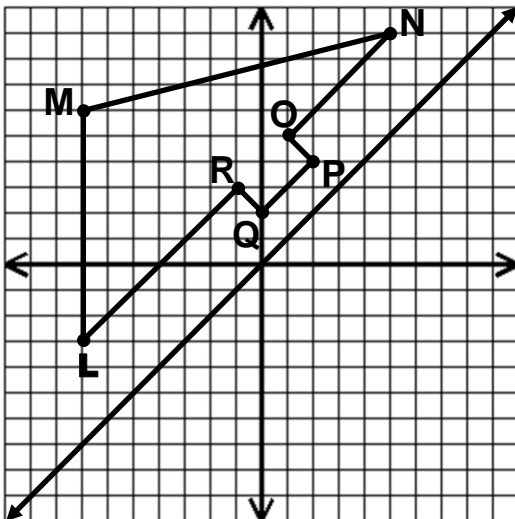
<p>11. _____</p>		<p><u>Rotational symmetry:</u></p> <p>Yes or No</p>
<p>12. _____</p>		<p><u>Rotational symmetry:</u></p> <p>Yes or No</p>

<p>13. _____</p>		<p><u>Rotational symmetry:</u> Yes or No</p>
<p>14. _____</p>	 <p>*Figure is a regular polygon.</p>	<p><u>Rotational symmetry:</u> Yes or No</p>

Answer each problem as indicated. DRAW images when appropriate.

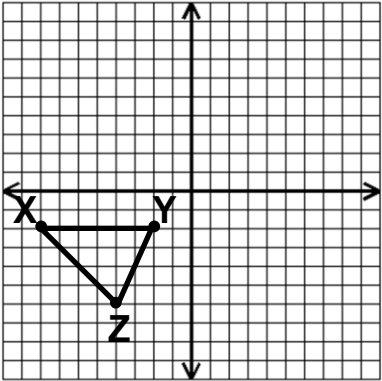
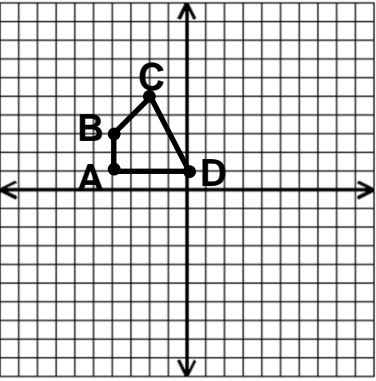
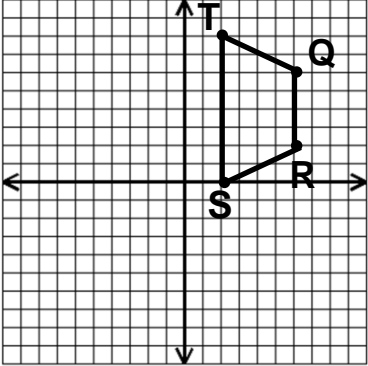
<p>15. Reflect across the y-axis.</p> <p>A' (____, ____)</p> <p>B' (____, ____)</p> <p>C' (____, ____)</p> <p>D' (____, ____)</p> 	<p>16. Reflect across the x-axis.</p> <p>R' (____, ____)</p> <p>S' (____, ____)</p> <p>T' (____, ____)</p> <p>U' (____, ____)</p> 
--	--

<p>17. _____</p>	<p>Using the figure in problem 15 above, what would be the coordinate of C if the figure is reflected in the line $y = -2$?</p>
------------------	--

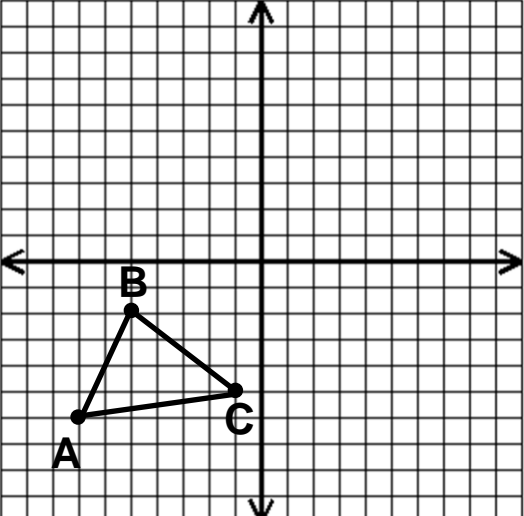
<p>18. L' (____, ____)</p> <p>M' (____, ____)</p> <p>N' (____, ____)</p> <p>O' (____, ____)</p> <p>P' (____, ____)</p> <p>Q' (____, ____)</p> <p>R' (____, ____)</p>	<p>Reflect across $y = x$.</p> 
--	--

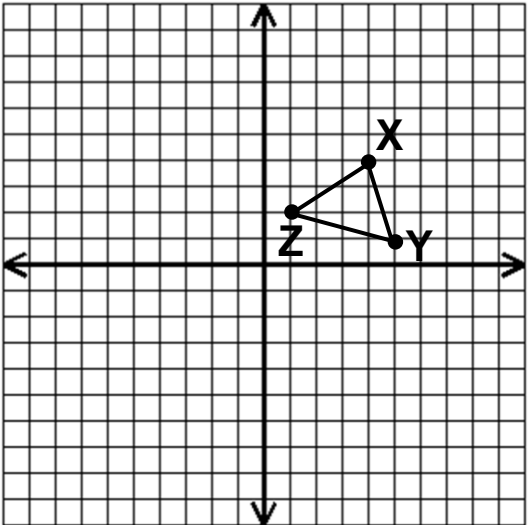
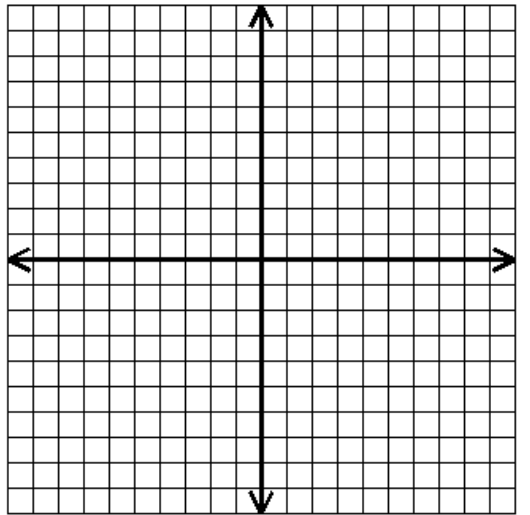
<p>19. _____</p>	<p>Using the figure in problem 18 above, what would be the coordinate of R if the figure is reflected in the line $x = -5$?</p>
------------------	--

PART 3: ROTATIONS – Rotate each polygon as indicated, **DRAW** the image when appropriate and state the coordinates of the new vertices.

<p>20. $X'(\underline{\quad}, \underline{\quad})$</p> <p>$Y'(\underline{\quad}, \underline{\quad})$</p> <p>$Z'(\underline{\quad}, \underline{\quad})$</p>	<p>Rotate 90° clockwise about the origin.</p> 
<p>21. _____</p>	<p>If a point $(2, 5)$ is rotated 180° about the origin, its image will be at what coordinates?</p>
<p>22. _____</p>	<p>If a point $(-3, 7)$ is rotated 270° clockwise about the origin, its image will be at what coordinates?</p>
<p>23. Rotate 180°.</p> <p>$A'(\underline{\quad}, \underline{\quad})$</p> <p>$B'(\underline{\quad}, \underline{\quad})$</p> <p>$C'(\underline{\quad}, \underline{\quad})$</p> <p>$D'(\underline{\quad}, \underline{\quad})$</p> 	<p>24. Rotate 90° counterclockwise.</p> <p>$Q'(\underline{\quad}, \underline{\quad})$</p> <p>$R'(\underline{\quad}, \underline{\quad})$</p> <p>$S'(\underline{\quad}, \underline{\quad})$</p> <p>$T'(\underline{\quad}, \underline{\quad})$</p> 

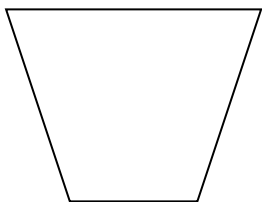
PART 4: DILATIONS – Dilate each of the following figures as indicated, **DRAW** the image and state the coordinates of the new vertices.

<p>25. $B'(\underline{\quad}, \underline{\quad})$</p> <p>$C'(\underline{\quad}, \underline{\quad})$</p>	<p>Scale Factor: 3 Center: A</p> 
---	---

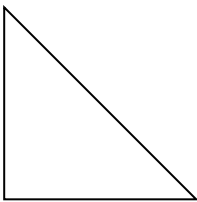
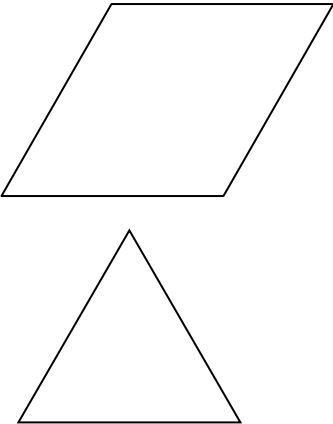
26. $A'(\underline{\quad}, \underline{\quad})$	What would be the image of point A after a reflection in the origin?
27. $X'(\underline{\quad}, \underline{\quad})$ $Y'(\underline{\quad}, \underline{\quad})$ $Z'(\underline{\quad}, \underline{\quad})$	<p>Scale Factor: 2 Center: origin</p> 
28. $R'(\underline{\quad}, \underline{\quad})$ $S'(\underline{\quad}, \underline{\quad})$ $T'(\underline{\quad}, \underline{\quad})$ $U'(\underline{\quad}, \underline{\quad})$	<p>Quadrilateral RSTU has vertices $R(-6, 3)$, $S(-4, 6)$, $T(1, 4)$, and $U(-4, -1)$. Rotate quadrilateral RSTU 90° clockwise about the origin then reflect it across the x-axis.</p> 

PART 5: TESSELLATIONS

Determine whether each figure can be used as a basic unit for a tessellation.

29. YES or NO	A regular 18-gon
30. YES or NO	

Use the figure or pair of figures to sketch a tessellation. Determine if each figure given has rotational symmetry .

<p>31.</p> 	
<p>32.</p> 	

Answer the following questions.

<p>33. _____</p>	<p>Point A is located at $(4, -7)$. The point is reflected in the x-axis. Where is the image of A located?</p> <p>A. $(-4, -7)$ B. $(4, 7)$ C. $(7, -4)$ D. $(-4, 7)$</p>
<p>34. _____</p>	<p>What are the coordinates of point P, the image of point $(3, -4)$ after a reflection in the line $y = x$?</p> <p>A. $(3, 4)$ B. $(-3, 4)$ C. $(4, -3)$ D. $(-4, 3)$</p>
<p>35. _____</p>	<p>What are the coordinates of the image of point $(-2, 6)$ after a reflection in the y-axis?</p> <p>A. $(2, -6)$ B. $(6, -2)$ C. $(2, 6)$ D. $(-2, -6)$</p>
<p>36. _____</p>	<p>What is the image of point $(-3, 2)$ after a reflection in the origin?</p> <p>A. $(-2, -3)$ B. $(3, -2)$ C. $(-3, -2)$ D. $(-2, 3)$</p>

37. _____	<p>The image of point $(-2, 3)$ under translation T is $(3, -1)$. What is the image of point $(4, 2)$ under the same translation?</p> <p>A. $(5, 4)$ B. $(0, 7)$ C. $(9, -2)$ D. $(-1, 6)$</p>
38. _____	<p>What is the image of point $(3, -5)$ under the translation that shifts (x, y) to $(x - 1, y - 3)$?</p> <p>A. $(-3, 15)$ B. $(2, -8)$ C. $(2, 8)$ D. $(-4, 8)$</p>
39. _____	<p>Point $P'(-6, -4)$ is the image of point $P(-2, 3)$ under translation T. What is the image of $(5, -1)$ under the same translation?</p> <p>A. $(-1, -5)$ B. $(9, 6)$ C. $(1, -8)$ D. $(3, 2)$</p>