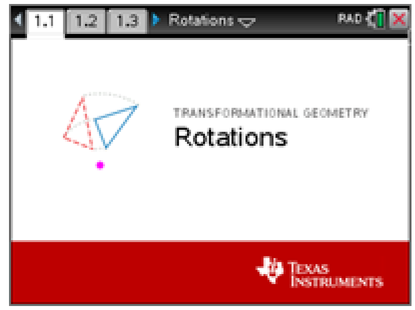
Rotations Lesson 8: Self-Assessment

Student Activity

Name ______________

Class ______________

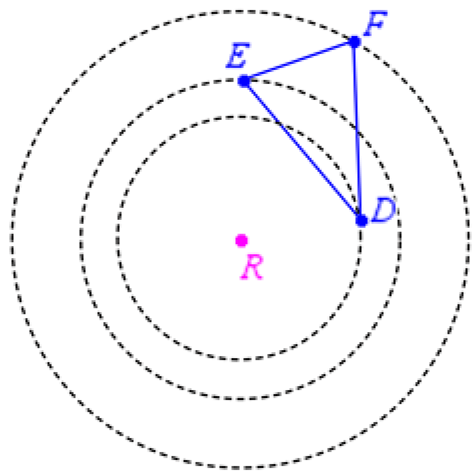
In this lesson, you will be given the opportunity to summarize, review, explore and extend ideas about Rotations.



<u>It is important that the Rotations Tour be done before any Rotations lessons.</u>

Use a compass and straightedge when needed.

1. Label the vertices of the images appropriately.



   a. Rotate ΔDEF 90° about point R. ($\Delta D'E'F'$)

   b. Rotate ΔDEF 180° about point R. ($\Delta D''E''F''$)

   c. Rotate ΔDEF 270° about point R. ($\Delta D'''E'''F'''$)

   d. Rotate ΔDEF 360° about point R. ($\Delta D^{(4)}E^{(4)}F^{(4)}$)

   e. If $m\angle D = 35^o$, then $m\angle D' =$ _________.

   f. If EF = 4.5 in, then E''F'' = ____________.

   g. If the slope of $\overline{ED}$ = – 2, then the slope of $\overline{E'D'}$ = ____________.

   h. If the slope of $\overline{EF} = \frac{2}{3}$, then the slope of $\overline{E''F''}$ = ____________.

   i. If the perimeter of ΔDEF is 8 in, then the perimeter of $\Delta D''E''F''$ is _____________.

   j. If the coordinates of point D are (3, 2), what are the coordinates of:

   D': ____________ D'': ______________ D''': ___________ $D^{(4)}$; ____________

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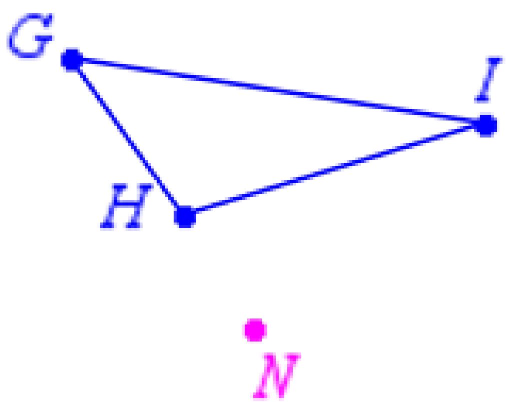
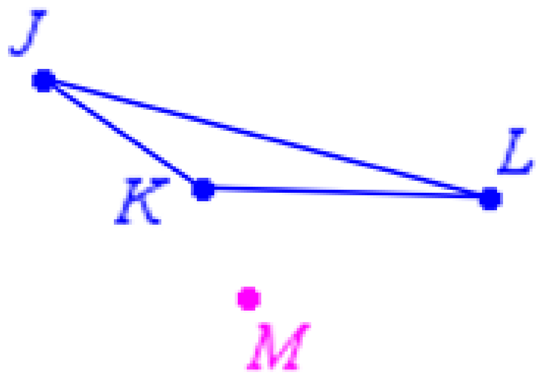
Use a compass and straightedge as needed.

2. Rotate ΔGHI 60° about point N.



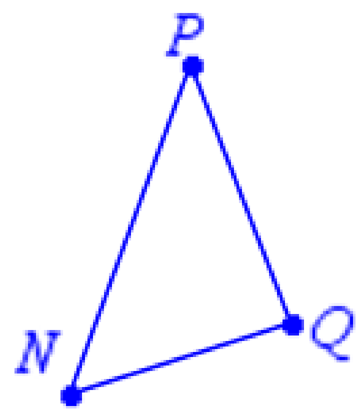
3. Rotate ΔJKL 135° about point M.



4. a. Rotate ΔNPQ 60° about point N. Label the image $\Delta N'P'Q'$.

   b. Rotate ΔNPQ 210° about point N. Label the image $\Delta N''P''Q''$.

   c. Rotate ΔNPQ – 45° about point N. Label the image $\Delta N'''P'''Q'''$.



Name ______________

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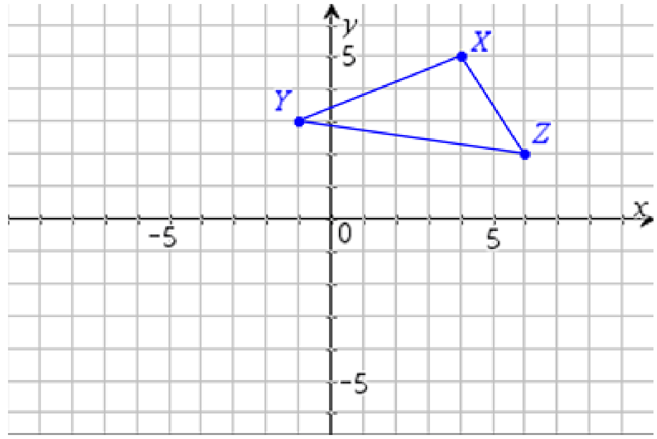
5. Label the vertices of the images appropriately.



a. Rotate ΔXYZ 90^{o} about the origin.

$m(\overline{XY}) =$ _____ $m(\overline{X'Y'}) =$ _____

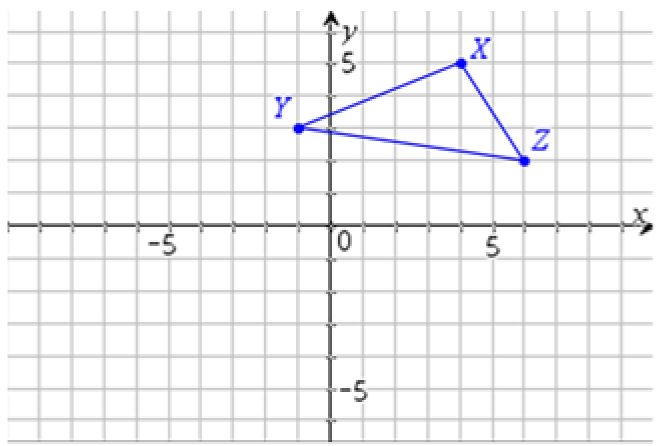
$m(\overline{YZ}) =$ _____ $m(\overline{Y'Z'}) =$ _____

$m(\overline{XZ}) =$ _____ $m(\overline{X'Z'}) =$ _____

Fill in the blanks with either ('is parallel to') or $\perp$ (' is perpendicular to'):

$\overleftrightarrow{XY}$ _____ $\overleftrightarrow{X'Y'}$ $\overleftrightarrow{YZ}$ _____ $\overleftrightarrow{Y'Z'}$ $\overleftrightarrow{XZ}$ _____ $\overleftrightarrow{X'Z'}$

Label the vertices of the images appropriately.



b. Rotate ΔXYZ 180^{o} about the origin.

$m(\overline{XY}) =$ _____ $m(\overline{X''Y''}) =$ _____

$m(\overline{YZ}) =$ _____ $m(\overline{Y''Z''}) =$ _____

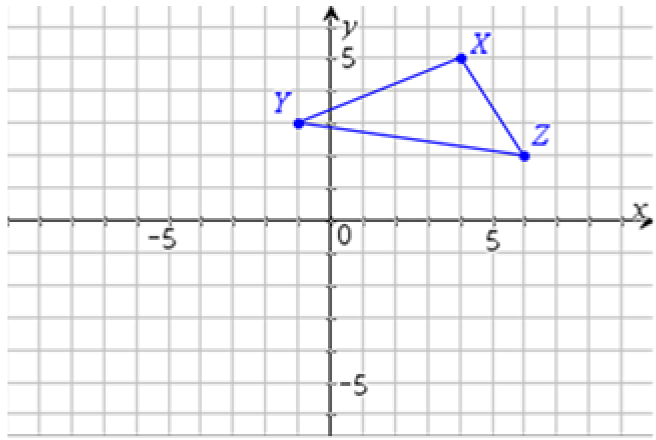
$m(\overline{XZ}) =$ _____ $m(\overline{X''Z''}) =$ _____

Fill in the blanks with either ('is parallel to') or $\perp$ (' is perpendicular to'):

$\overleftrightarrow{XY}$ _____ $\overleftrightarrow{X''Y''}$ $\overleftrightarrow{YZ}$ _____ $\overleftrightarrow{Y''Z''}$ $\overleftrightarrow{XZ}$ _____ $\overleftrightarrow{X''Z''}$

Label the vertices of the images appropriately.

c. Rotate ΔXYZ 270° about the origin.



$m(\overline{XY}) =$ _____ $m(\overline{X'''Y'''}) =$ _____

$m(\overline{YZ}) =$ _____ $m(\overline{Y'''Z'''}) =$ _____

$m(\overline{XZ}) =$ _____ $m(\overline{X'''Z'''}) =$ _____

Fill in the blanks with either ∥ ('is parallel to') or ⊥ (' is perpendicular to'):

$\overleftrightarrow{XY}$ _____ $\overleftrightarrow{X'''Y'''}$ $\overleftrightarrow{YZ}$ _____ $\overleftrightarrow{Y'''Z'''}$ $\overleftrightarrow{XZ}$ _____ $\overleftrightarrow{X'''Z'''}$

6. a. The corresponding sides of rotated triangles are ______________________________.

   b. The corresponding angles of rotated triangles are ______________________________.

   c. If a triangle is rotated about a point through a given angle measure, then the pre-image triangle and the image triangle are ___________________________ to each other.

7. If a triangle is rotated about a point through x°, the corresponding angles and the corresponding sides of the pre-image and image triangles are congruent and the triangles are __________________________.

   Therefore, a rotation is a ______________________, or an ________________________.

   We also say that a rotation is a __________________________________

   and an ________________________________ transformation.