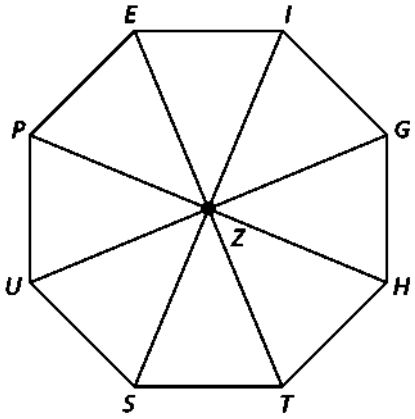
Name_____ Class_____ Date_____

Practice 9-3

Rotations

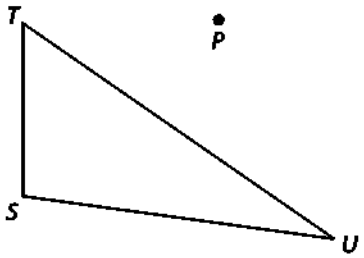
Regular octagon *EIGHTSUP* is divided into eight congruent triangles. Find the image of each point or segment for the given rotation.



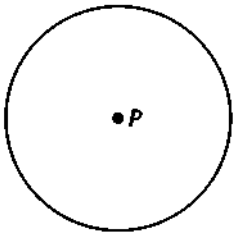
1. 45° rotation of G about Z
2. 225° rotation of U about Z
3. 315° rotation of E about Z
4. 270° rotation of $\overline{EI}$ about Z
5. 135° rotation of S about Z
6. 360° rotation of $\overline{ST}$ about Z

Copy each figure and point *P*. Draw the image of each figure for the given rotation about *P*. Label the vertices of each image.

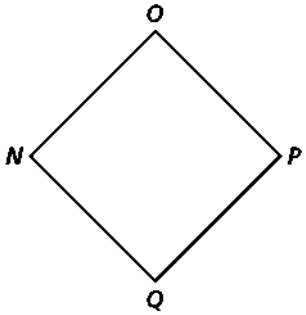
7. 70°



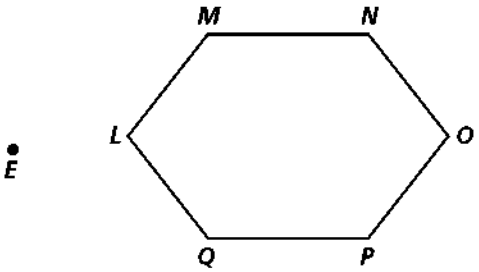
8. 50°



9. 90°

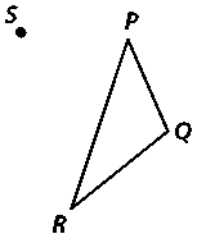


10. Rotate the hexagon 60° about point E, draw its image, and label the vertices. Repeat this procedure three more times, rotating the original figure 120°, 180°, and 240°.



11. In Exercise 10, which vertex is closest to point E in all four figures?

Copy $\triangle PQR$ and point *S*. Then draw the image for the given composition of rotations about point *S*.



12. 20° and then 70°

13. 30° and then 30°

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