Name _____ Class _____ Date _____

Practice

Form K

Rotations

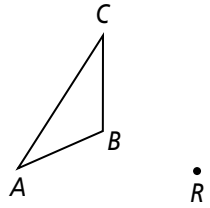
Copy each figure and point *R*. Draw the image of each figure for the given rotation about *R*. Use prime notation to label the vertices of the image.

1. 30°

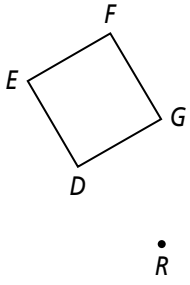
To start, draw a 30° angle with R as the vertex and $\overline{RA}$ as one side.

Locate A' so that $\overline{RA'} \cong$? .

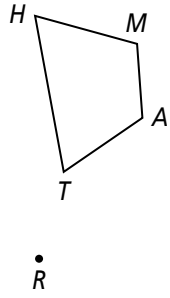
Continue to find B' and C'.



2. 60°

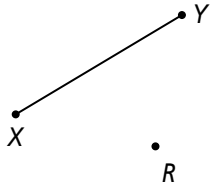


3. 90°

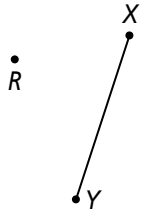


Copy each figure and point *R*. Then draw the image of $\overline{XY}$ for a 120° rotation about *R*. Use prime notation to label the vertices of the image.

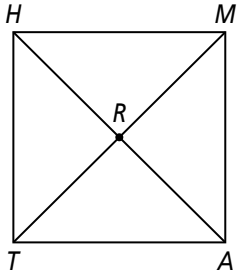
4.



5.



Point *R* is the center of regular quadrilateral *MATH*. Find the image of the given point or segment for the given rotation.



6. $r_{(90°, R)}(H)$

7. $r_{(180°, R)}(M)$

8. $r_{(270°, R)}(\overline{AT})$

9. $r_{(360°, R)}(\overline{HM})$

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Practice (continued) *Form K*

Rotations

For Exercises 10–12, *ABCD* has vertices *A*(1, 1), *B*(1, 3), *C*(4, 3), and *D*(4, 1).

10. Graph $r_{(90°, O)}(ABCD)$.

To start, graph *ABCD*.

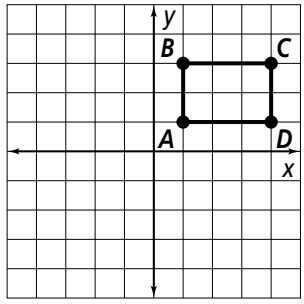
$A' = r_{(90°, O)}(A) = (-1, \square)$

$B' = r_{(90°, O)}(B) = (-3, \square)$

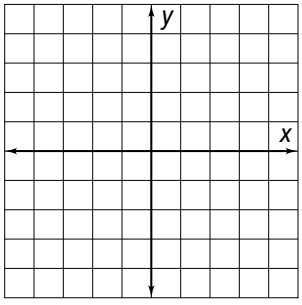
$C' = r_{(90°, O)}(C) = (\square, 4)$

$D' = r_{(90°, O)}(D) = (\square, 4)$

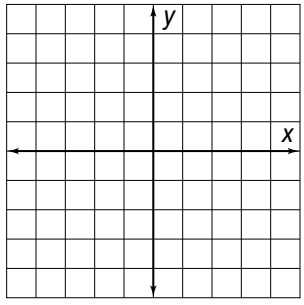
Then graph A', B', C', and D'.



11. Graph $r_{(180°, O)}(ABCD)$.



12. Graph $r_{(270°, O)}(ABCD)$.



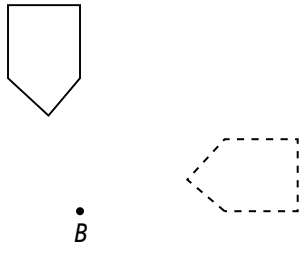
13. The vertices of $\triangle PQR$ have coordinates $P(1, 5)$, $Q(3, 1)$, and $R(-2, 1)$. What are the coordinates of the vertices of $r_{(90°, O)}(\triangle PQR)$?

14. *ABCD* has vertices $A(4, 2)$, $B(-2, 2)$, $C(-4, -2)$, and $D(2, -2)$. Which of the following quadrilaterals is $r_{(180°, O)}(ABCD)$?

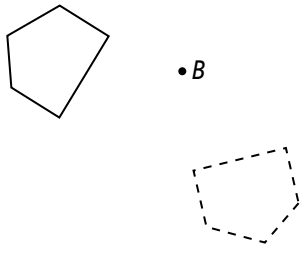
Ⓐ *ABCD* Ⓑ *BCDA* Ⓒ *CDAB* Ⓓ *DABC*

Find the angle of rotation about *B* that maps the solid-line figure to the dashed-line figure.

15.



16.



17. $\triangle XYZ$ has vertices at $X(2, 0)$, $Y(0, 0)$, and $Z(0, 5)$. Find the coordinates of the vertices of $r_{(180°, Y)}(\triangle XYZ)$.