

Name \_\_\_\_\_

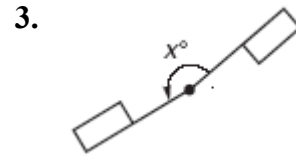
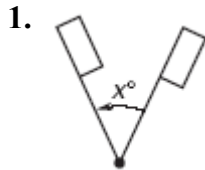
Date \_\_\_\_\_

**LESSON 9.4**

**Practice B**

*For use with pages 598–605*

**Match the diagram with the angle of rotation.**



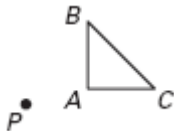
A.  $110^\circ$

B.  $170^\circ$

C.  $50^\circ$

**Trace the polygon and point  $P$  on paper. Then draw a rotation of the polygon the given number of degrees about  $P$ .**

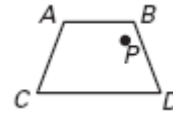
4.  $45^\circ$



5.  $120^\circ$

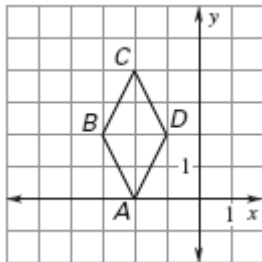


6.  $135^\circ$

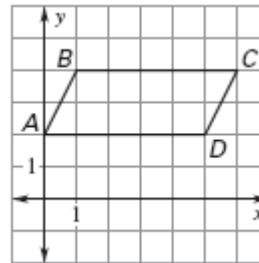


**Rotate the figure the given number of degrees about the origin. List the coordinates of the vertices of the image.**

7.  $180^\circ$

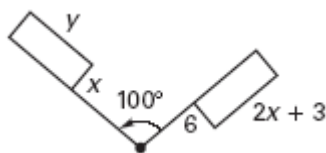


8.  $270^\circ$

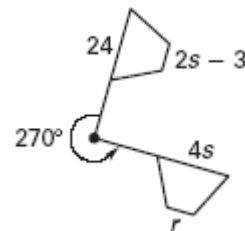


**Find the value of each variable in the rotation.**

9.

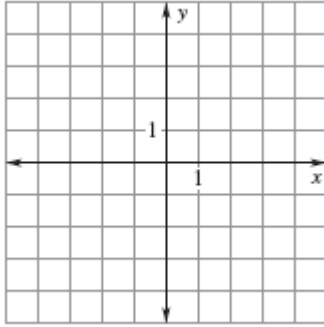


10.

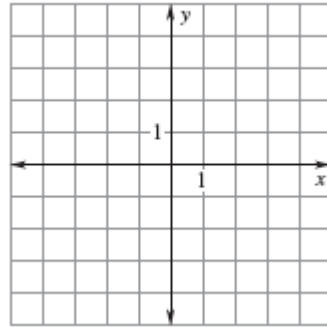


Find the image matrix that represents the rotation of the polygon about the origin. Then graph the polygon and its image.

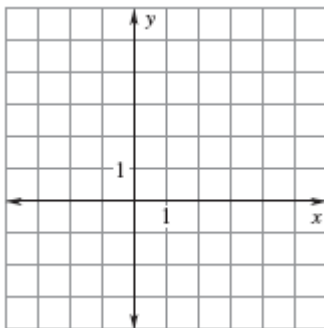
11. 
$$\begin{matrix} A & B & C \\ \begin{bmatrix} 1 & 4 & 3 \\ 2 & 2 & 4 \end{bmatrix}; & 90^\circ \end{matrix}$$



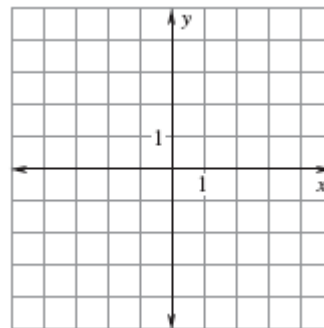
12. 
$$\begin{matrix} A & B & C \\ \begin{bmatrix} 0 & 4 & 2 \\ -1 & 0 & 3 \end{bmatrix}; & 180^\circ \end{matrix}$$



13. 
$$\begin{matrix} A & B & C & D \\ \begin{bmatrix} 1 & 2 & 4 & 5 \\ -1 & 3 & 3 & -1 \end{bmatrix}; & 90^\circ \end{matrix}$$

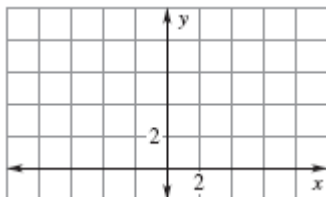


14. 
$$\begin{matrix} A & B & C & D \\ \begin{bmatrix} -3 & -2 & 2 & 1 \\ -4 & -1 & -1 & -4 \end{bmatrix}; & 270^\circ \end{matrix}$$



The endpoints of  $\overline{CD}$  are  $C(2, 1)$  and  $D(4, 5)$ . Graph  $\overline{C'D'}$  and  $\overline{C''D''}$  after the given rotations.

15. **Rotation:**  $90^\circ$  about the origin  
**Rotation:**  $270^\circ$  about  $(2, 0)$



16. **Rotation:**  $180^\circ$  about the origin  
**Rotation:**  $90^\circ$  about  $(0, -3)$

