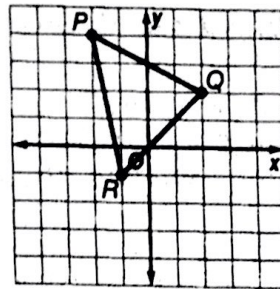


Skills Practice

Translations and Reflections on the Coordinate Plane

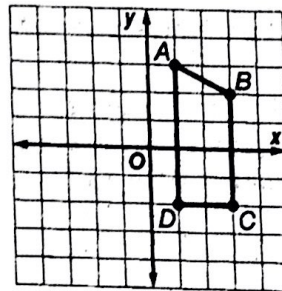
For Exercises 1 and 2, use the coordinate plane below. Triangle PQR is shown.

- Find the coordinates of the vertices of the image of $\triangle PQR$ translated 3 units to the left and 4 units down.
- Find the coordinates of the vertices of the image of $\triangle PQR$ translated 2 units to the right and 5 units down.

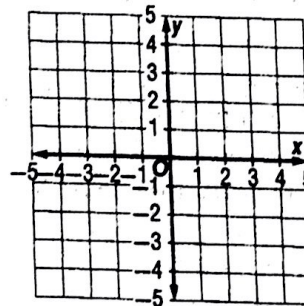


For Exercises 3 and 4, use the coordinate plane below. Figure $ABCD$ is shown.

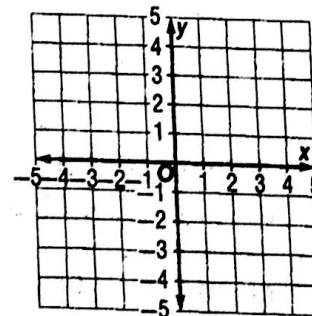
- Find the coordinates of the vertices of the image of figure $ABCD$ translated 1 unit to the right and 6 units down.
- Find the coordinates of the vertices of the image of figure $ABCD$ translated 4 units to the left and 2 units up.



- The vertices of figure $HJKL$ are $H(3, 1)$, $J(5, -2)$, $K(1, -4)$, and $L(1, 0)$. Graph the figure and its image after a reflection over the y -axis.



- The vertices of figure $STUV$ are $S(-3, 2)$, $T(-2, 4)$, $U(3, 3)$, and $V(2, 1)$. Graph the figure and its image after a reflection over the x -axis.

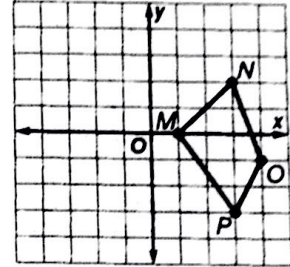


Practice

Translations and Reflections on the Coordinate Plane

For Exercises 1 and 2, use the coordinate plane below. Figure *MNOP* is shown.

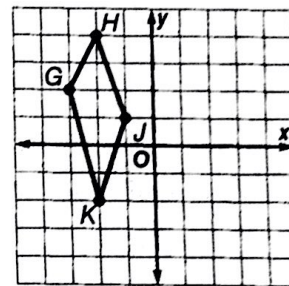
1. Find the coordinates of the vertices of the image of figure *MNOP* translated 6 units to the left and 3 units down.



2. Find the coordinates of the vertices of the image of figure *MNOP* translated 4 units to the left and 4 units up.

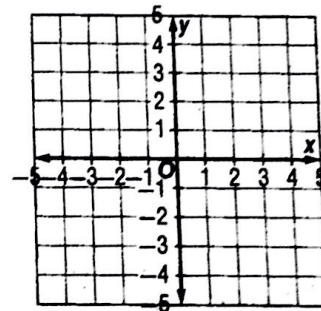
For Exercises 3 and 4, use the coordinate plane below. Figure *GHJK* is shown.

3. Find the coordinates of the vertices of the image of figure *GHJK* translated 3 units to the right and 1 unit up.



4. Find the coordinates of the vertices of the image of figure *GHJK* translated 5 units to the right and 2 units down.

5. The vertices of figure *WXYZ* are $W(2, 3)$, $X(4, 2)$, $Y(3, -3)$, and $Z(1, -1)$. Graph the figure and its image after a reflection over the *y*-axis.



6. The coordinate grid at right shows the location of the old city hall building and the new city hall building. Describe the translation of the building in words and as an ordered pair.

