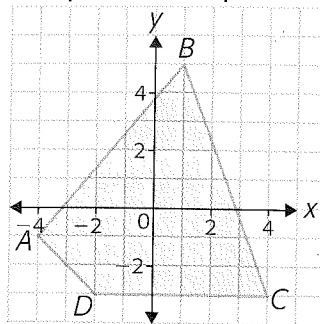
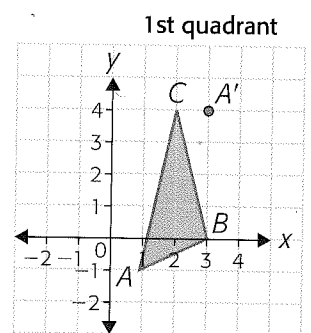


2nd quadrant 1st quadrant



3rd quadrant 4th quadrant



4th quadrant

B Practising

3. Determine the vertices of $A'B'C'D'$ after each transformation of $ABCD$.

- a) a reflection across the x -axis
- b) a reflection across the y -axis

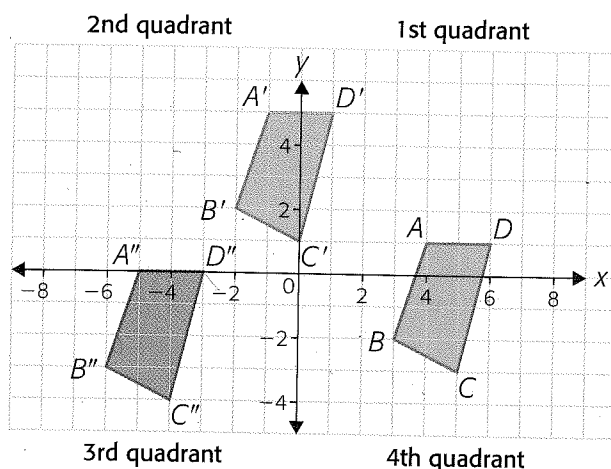
4. Fazel says that if you reflect a triangle in the x -axis and then in the y -axis, the image of the triangle will be the same as if you did the reflections in the opposite order. Do you think he is right? Use the coordinates of three different triangles to support your opinion.

- 5. a) Describe the translation that moves vertex A to $A'(3, 4)$.
- b) State the images of B and C after the same translation.

6. The vertices of $\triangle XYZ$ are $X(0, -4)$, $Y(0, 0)$, and $Z(3, 3)$. Determine the image vertices if $\triangle XYZ$ is translated 3 units to the right and 2 units down.

7. Describe the translation that moves

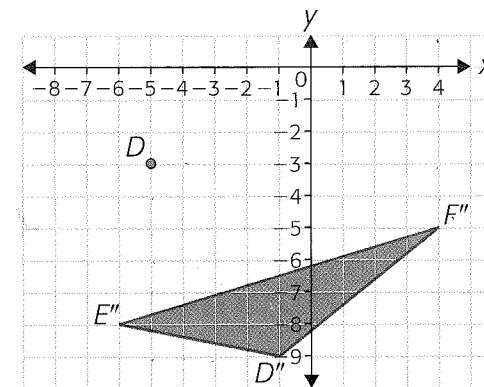
- a) $ABCD$ to $A'B'C'D'$
- b) $A'B'C'D'$ to $A''B''C''D''$
- c) $ABCD$ to $A''B''C''D''$



8. The vertices of $\triangle PQR$ are $P(-2, -1)$, $Q(2, 1)$, and $R(0, 4)$. Determine the vertices of the image after a translation that moves vertex P to vertex Q .

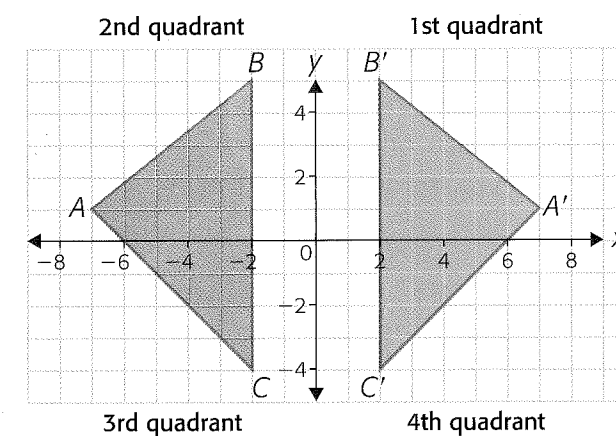
9. $\triangle DEF$ is transformed to $\triangle D''E''F''$ by applying the same translation two times. The coordinates of D are $(-5, -3)$.

- a) Describe the translation.
- b) Write the coordinates of vertices E and F .



3rd quadrant 4th quadrant

10. How can you use only the coordinates of the vertices to show that $\triangle A'B'C'$ is **not** the image of $\triangle ABC$ after a translation?



3rd quadrant 4th quadrant

11. Two vertices of a square are $P(-2, 4)$ and $Q(4, 4)$.

- a) State two possible sets of coordinates for the other two vertices.

b) Draw your two squares on grid paper.

c) Describe the translation that would move the upper square to the lower square.

12. A shape is completely in the 1st quadrant. Where could it be after a translation? Where could it be after a reflection?