

Lesson 8-6

Example 1

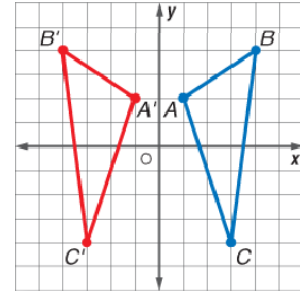
Graph the image of $\triangle ABC$ with vertices $A(1, 2)$, $B(4, 4)$, and $C(3, -4)$ under a reflection across the y -axis.

Solution

The y -coordinates will remain the same, but the x -coordinates are all opposite. Multiply the x -coordinate of each vertex by -1 .

$$\begin{aligned} A(1, 2) &\square A'(1 \cdot (-1), 2) \square A'(-1, 2) \\ B(4, 4) &\square B'(4 \cdot (-1), 4) \square B'(-4, 4) \\ C(3, -4) &\square C'(3 \cdot (-1), -4) \square C'(-3, -4) \end{aligned}$$

The reflected image of $\triangle ABC$ across the y -axis is $\triangle A'B'C'$.



Example 2

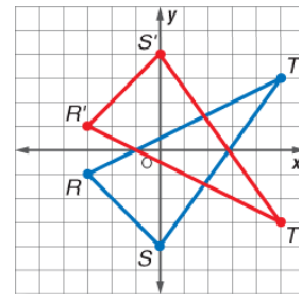
Graph the image of $\triangle RST$ with vertices $R(-3, -1)$, $S(0, -4)$, and $T(5, 3)$ under a reflection across the x -axis.

Solution

The x -coordinates will remain the same, but the y -coordinates are all opposite. Multiply the y -coordinate of each vertex by -1 .

$$\begin{aligned} R(-3, -1) &\square R'(-3, -1 \cdot (-1)) \square R'(-3, 1) \\ S(0, -4) &\square S'(0, -4 \cdot (-1)) \square S'(0, 4) \\ T(5, 3) &\square T'(5, 3 \cdot (-1)) \square T'(5, -3) \end{aligned}$$

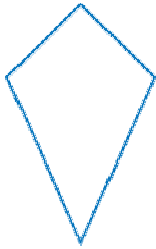
The reflected image of $\triangle RST$ across the x -axis is $\triangle R'S'T'$.



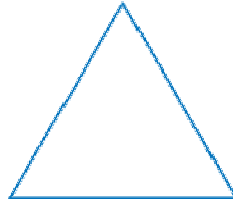
Example 3

Trace each figure and draw all the lines of symmetry.

a.



b.

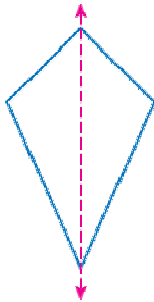


c.



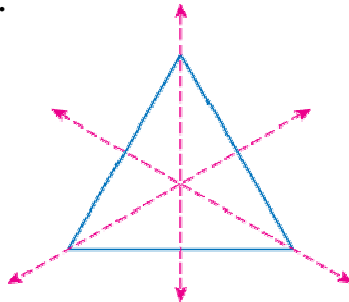
Solution

a.



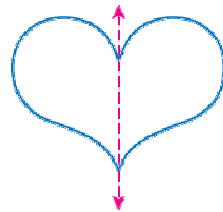
1 line of symmetry

b.



3 lines of symmetry

c.



1 line of symmetry