

Notes: Reflections

flip

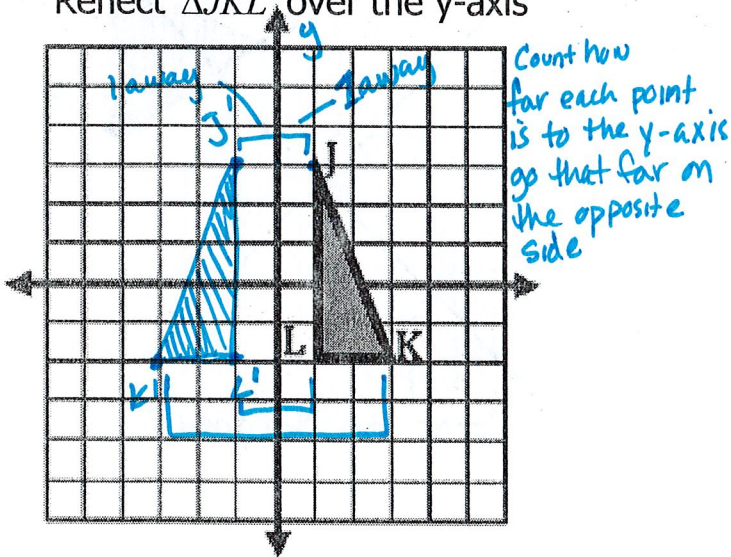
A transformation that reflects each point of the figure over a line.

Pre-Image: before reflection Image: After reflection

Isometry: same size

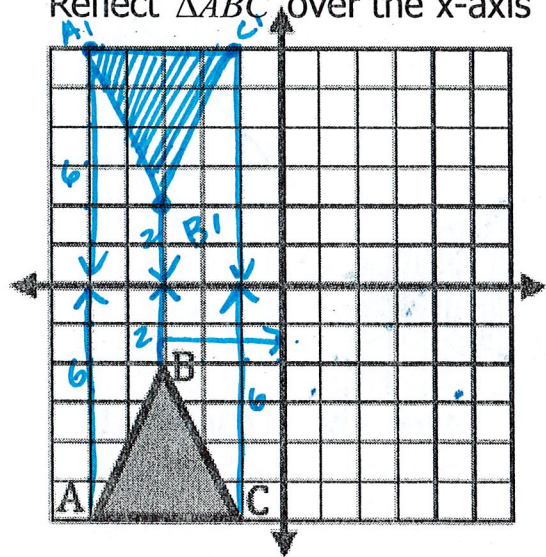
Example 1)

Reflect $\triangle JKL$ over the y-axis



Example 2)

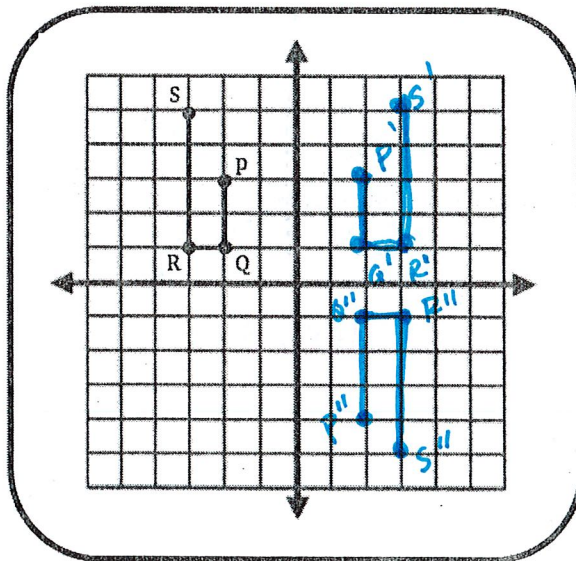
Reflect $\triangle ABC$ over the x-axis



Reflect PQRS over the y-axis

y same x opposite

$PQRS \rightarrow P'Q'R'S'$
 $P(-2,3) \rightarrow P'(2,3)$
 $Q(-2,1) \rightarrow Q'(2,1)$
 $R(-3,1) \rightarrow R'(3,1)$
 $S(-3,5) \rightarrow S'(3,5)$



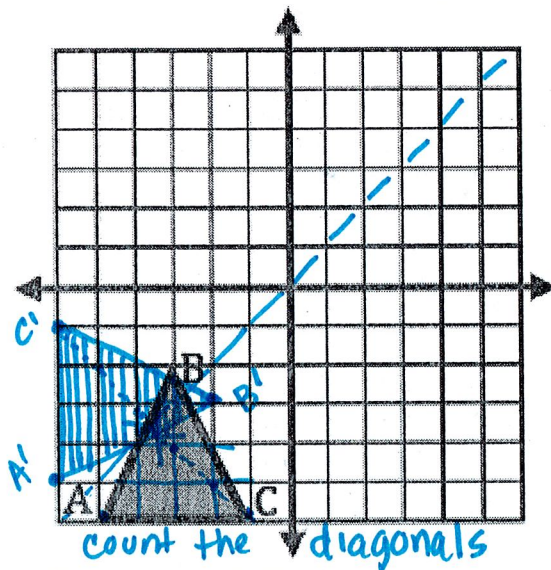
Reflect PQRS over the x-axis

x same, y opposite

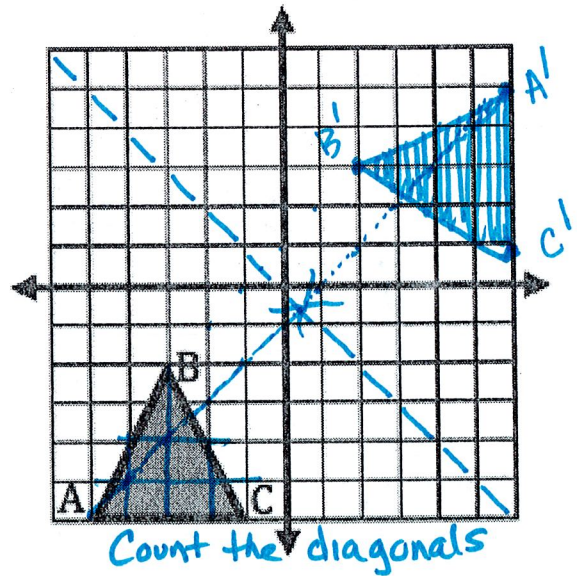
$PQRS \rightarrow P''Q''R''S''$
 $P(2,3) \rightarrow P''(2,-3)$
 $Q(2,1) \rightarrow Q''(2,-1)$
 $R(3,1) \rightarrow R''(3,-1)$
 $S(3,5) \rightarrow S''(3,-5)$

| | | | |
|---------|----------|----------|---------------|
| | x-axis | y-axis | both at once! |
| (x,y) | $(x,-y)$ | $(-x,y)$ | $(-x,-y)$ |

Reflection over the line $y=x$

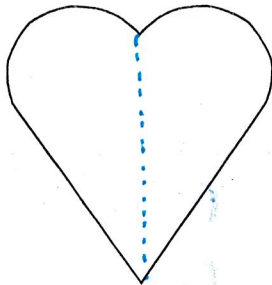


Reflection over the line $y=-x$

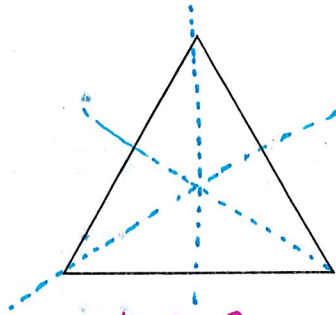


Reflectional Symmetry

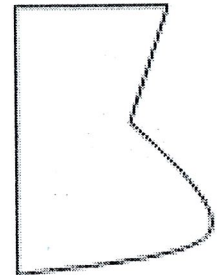
Examples: Do the following have reflectional symmetry? If so, draw the line(s) of symmetry. How many lines of symmetry does each figure have?



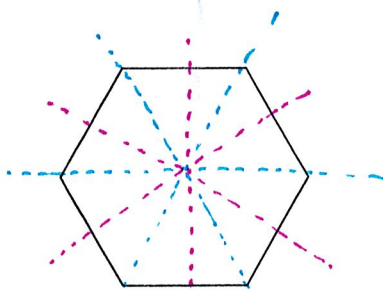
yes, 1



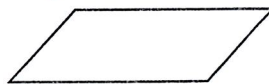
yes, 3



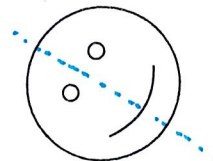
No



yes, 6



NO



yes, 1