Chapter 9 (online textbook)

Section 9.1

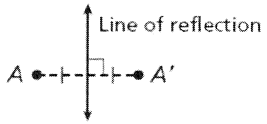
REFLECTIONS

Recall that a [ ] is a transformation that moves a figure (the preimage) by [ ] across a line. The reflected figure is called the [ ]. A reflection is an [ ] so the image is always [ ] to the preimage.

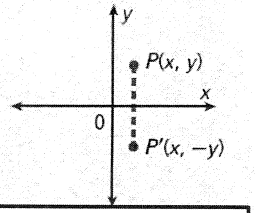
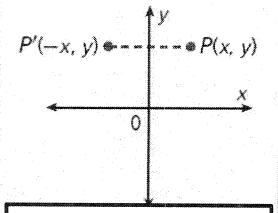
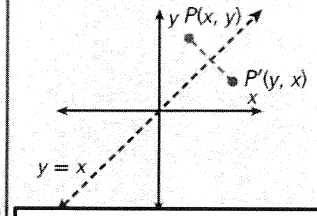
An [ ] is a transformation that does not change the shape or size of a figure. [ ], [ ], and [ ] are all [ ]. [ ] are also called [ ] transformations or [ ]

Reflections

A reflection is a transformation across a line, called the line of reflection, so that the line of reflection is the perpendicular bisector of each segment joining each point and its image.

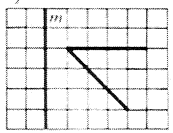


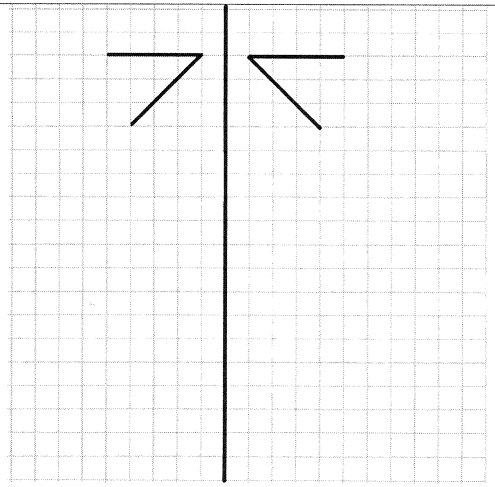
Reflections in the Coordinate Plane

ACROSS THE x-AXIS	ACROSS THE y-AXIS	ACROSS THE LINE $y = x$
		
[ ]	[ ]	[ ]

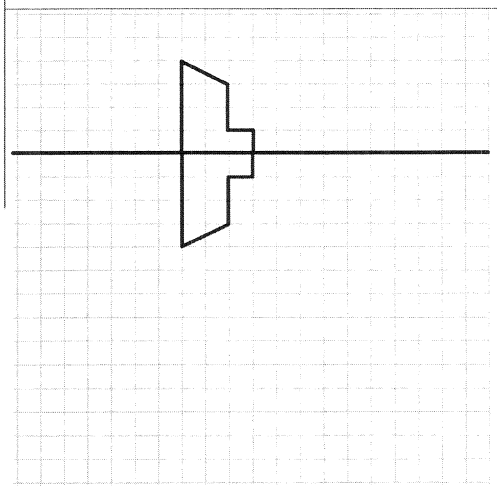
1-6: Copy each figure on graph paper. Then draw the image by reflection in line *m*.

1)

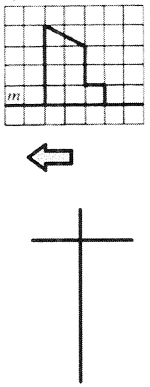




1-6: Copy each figure on graph paper. Then draw the image by reflection in line *m*.

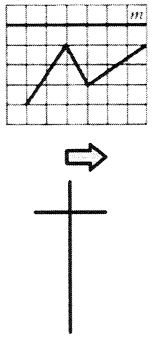


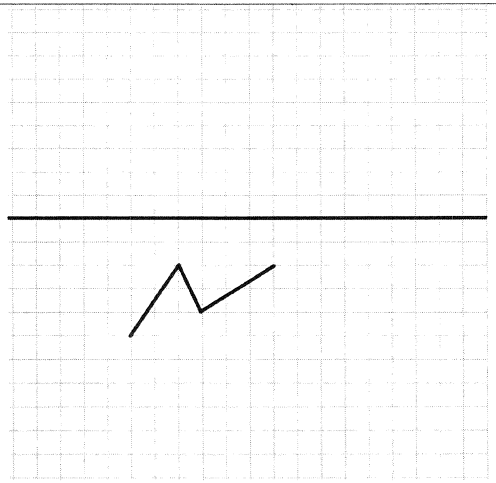
2)



1-6: Copy each figure on graph paper. Then draw the image by reflection in line *m*.

3)





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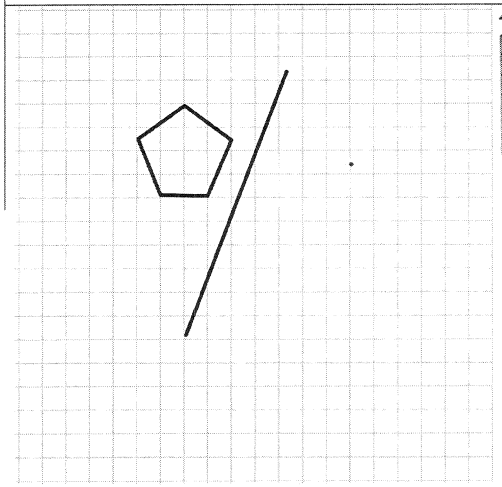
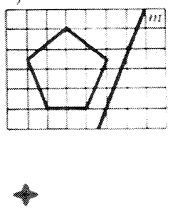
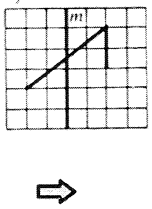


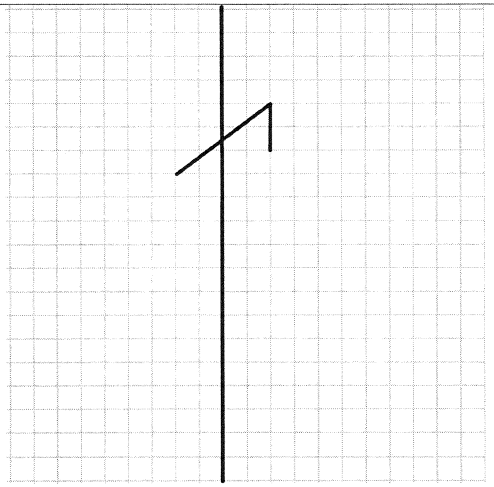
4)



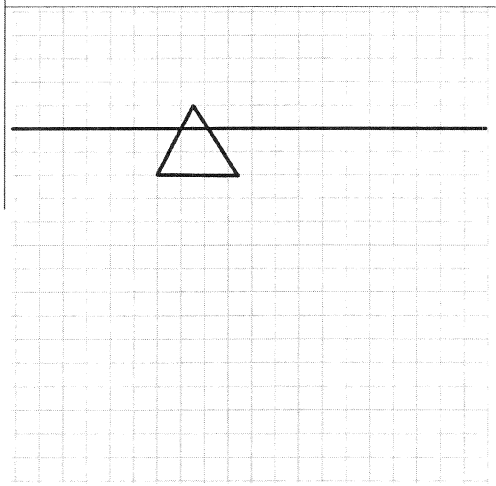
1-6: Copy each figure on graph paper. Then draw the image by reflection in line *m*.

5)

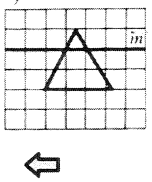




1-6: Copy each figure on graph paper. Then draw the image by reflection in line *m*.

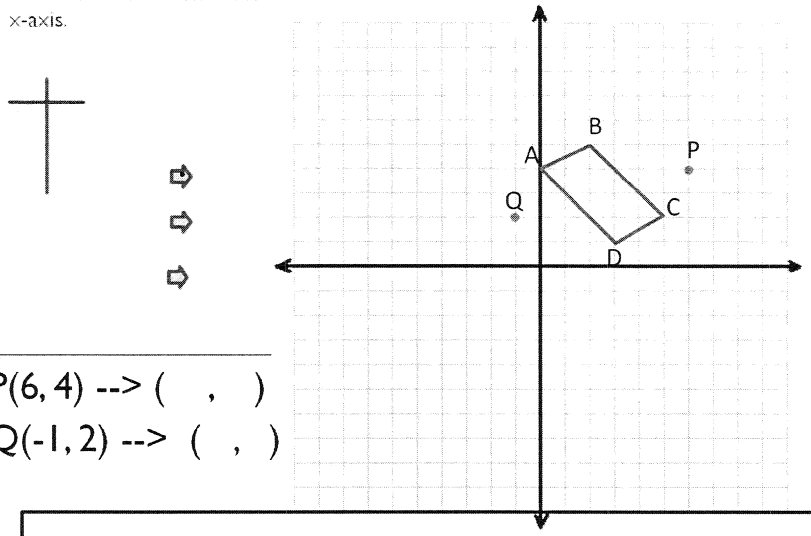


6)



7-9: Find the image of $P(6,4)$, $Q(-1,2)$, and $\square ABCD$ with $A(0,4)$, $B(2,5)$, $C(5,2)$, and $D(3,1)$ under each reflection.

7) The line of reflection is the x-axis.



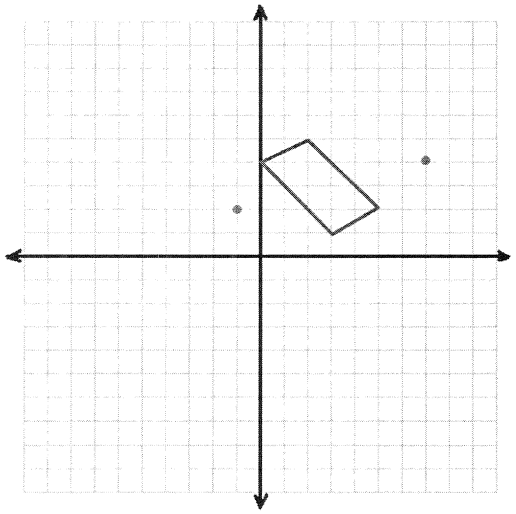
P(6, 4) --> (,)

Q(-1, 2) --> (,)

A reflection in the x-axis maps (x, y) to (x, -y)

7-9: Find the image of $P(6,4)$, $Q(-1,2)$, and $\square ABCD$ with $A(0,4)$, $B(2,5)$, $C(5,2)$, and $D(3,1)$ under each reflection.

8) The line of reflection is the y-axis.



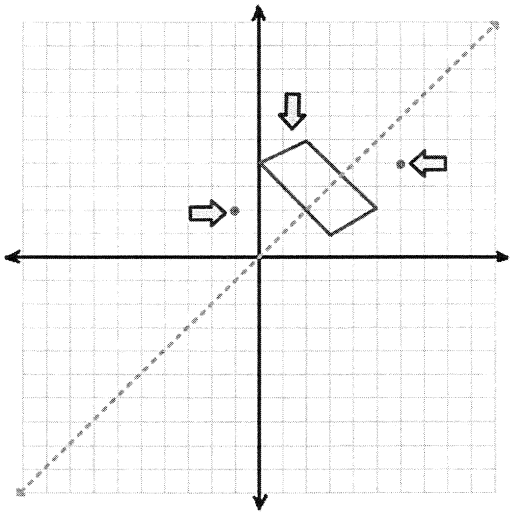
P(6, 4) --> (,)

Q(-1, 2) --> (,)

A reflection in the y-axis maps (x, y) to (-x, y)

7-9: Find the image of $P(6,4)$, $Q(-1,2)$, and $\square ABCD$ with $A(0,4)$, $B(2,5)$, $C(5,2)$, and $D(3,1)$ under each reflection.

9) The line of reflection is the line $y = x$.



P(6, 4) --> (,)

Q(-1, 2) --> (,)

A reflection in the line y = x maps (x, y) to (y, x)

Reflect the figure with the given vertices across the given line.

***X*(2, −1), *Y*(−4, −3), *Z*(3, 2); *x*-axis**

The reflection of (x, y) is ☐

$X(2,-1) \rightarrow$ ☐

$Y(-4,-3) \rightarrow$ ☐

$Z(3, 2) \rightarrow$ ☐

R*(−2, 2), *S*(5, 0), *T*(3, −1); *y* = *x

The reflection of (x, y) is ☐

$R(-2, 2) \rightarrow$ ☐

$S(5, 0) \rightarrow$ ☐

$T(3, -1) \rightarrow$ ☐

Lesson Quiz: Part II

Reflect the figure with the given vertices across the given line.

3. $A(2, 3), B(-1, 5), C(4,-1); y = x$

☐

4. $U(-8, 2), V(-3, -1), W(3, 3)$; y-axis

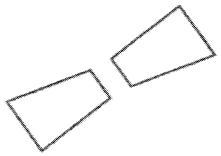
☐

5. $E(-3, -2), F(6, -4), G(-2, 1)$; x-axis

☐

Lesson Quiz: Part I

1. Tell whether the transformation appears to be a reflection. If so, draw the line of reflection.



2. Copy the figure and the line of reflection. Draw the reflection of the figure across the line.