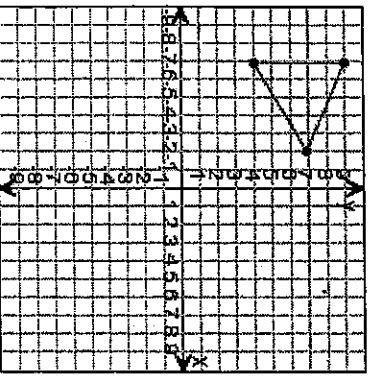


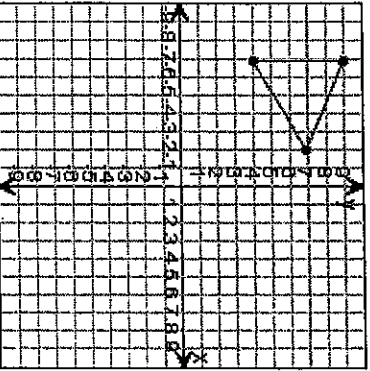
REFLECTIONS

A reflection is a _____.

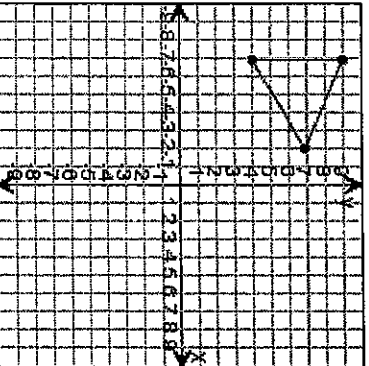
In the x-axis:



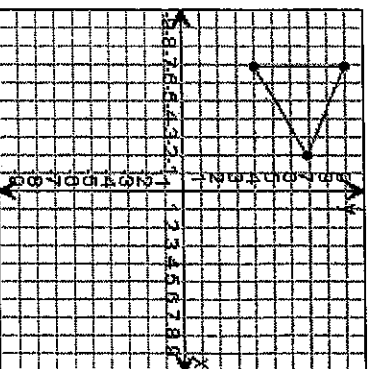
In the y-axis:



In a vertical line



In a horizontal line



other than y-axis ($x = \#$)

other than x-axis ($y = \#$)

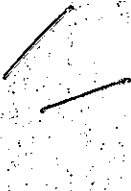
Rule: ()

Rule: ()

Things to know:

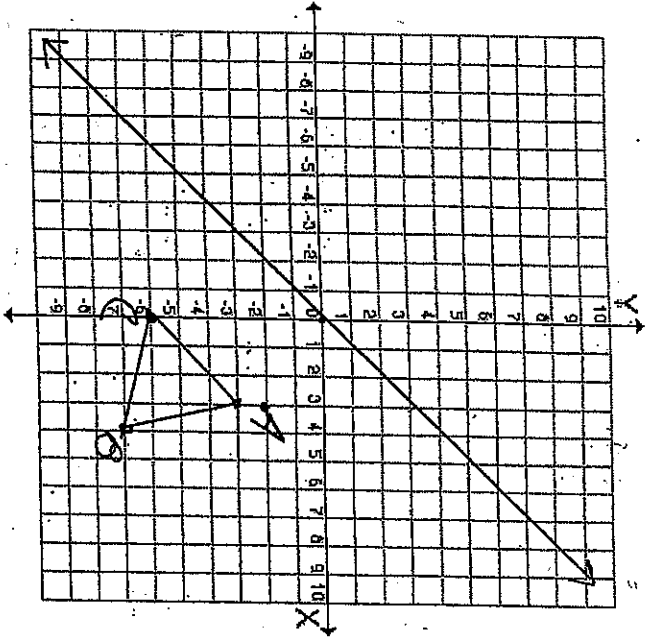
In words:

In words:



diagonal line:

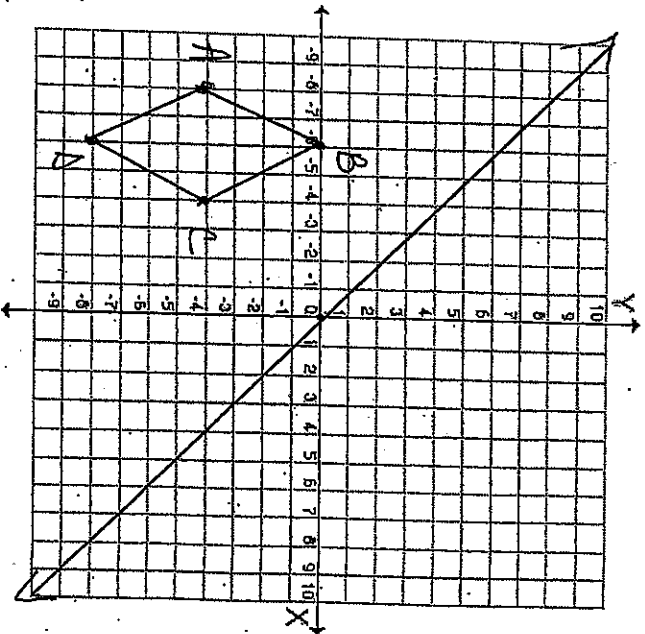
$$y = x$$



Rule: (,)

In words:

$$y = -x$$

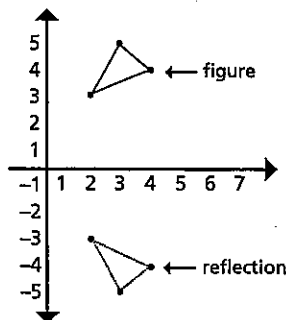


Reflections Across the X-Axis

GEOMETRY

When a figure is reflected across the X-axis,

what happens the y to +.



Record the reflected coordinates on the table. Then, draw an XY axis on graph paper and check your work by plotting both sets of points.

1

Figure	Reflection
(2, -8)	
(2, -2)	
(4, -2)	
(4, -6)	
(7, -6)	
(7, -8)	

2

Figure	Reflection
(1, 3)	
(1, 8)	
(5, 8)	
(5, 6)	
(4, 6)	
(4, 5)	
(5, 5)	
(5, 3)	

3

Figure	Reflection
(-3, 3)	
(-5, 6)	
(-3, 9)	
(-5, 9)	
(-6, 7)	
(-7, 9)	
(-9, 9)	
(-7, 6)	
(-9, 3)	
(-7, 3)	
(-6, 5)	
(-5, 3)	

4

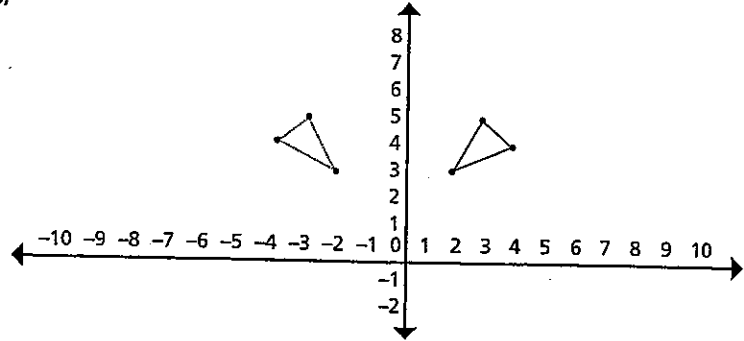
Figure	Reflection
(-6, -2)	
(-4, -4)	
(-6, -5)	
(-4, -8)	
(-8, -8)	
(-10, -5)	
(-8, -4)	
(-10, -2)	

Reflections Across the Y-Axis

GEOMETRY

When a figure is reflected across the Y-axis,

What happens?



Record the reflected coordinates on the table. Then, draw an XY axis on graph paper and check your work by plotting both sets of points.

1

Figure	Reflection
(-2, 6)	
(-2, 8)	
(-5, 8)	
(-5, 7)	
(-7, 7)	
(-7, 4)	
(-5, 4)	
(-5, 6)	

2

Figure	Reflection
(-3, 3)	
(-3, 6)	
(-4, 5)	
(-4, 8)	
(-7, 7)	
(-7, 5)	
(-6, 6)	
(-6, 3)	
(-7, 2)	
(-4, 2)	

3

Figure	Reflection
(2, 4)	
(2, 6)	
(4, 9)	
(5, 7)	
(8, 9)	
(8, 6)	

4

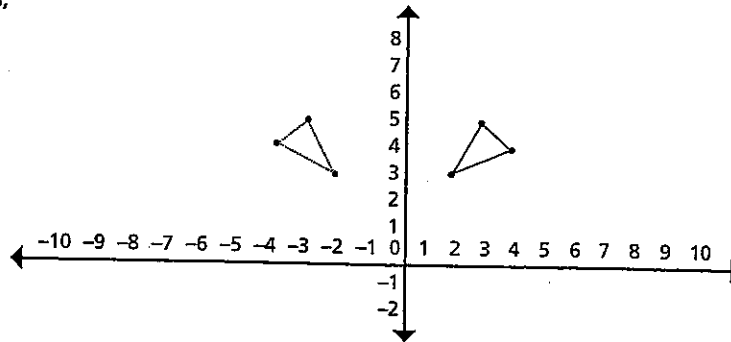
Figure	Reflection
(4, 5)	
(6, 7)	
(9, 7)	

Reflections Across the Y-Axis

GEOMETRY

When a figure is reflected across the Y-axis,

What happens?



Record the reflected coordinates on the table. Then, draw an XY axis on graph paper and check your work by plotting both sets of points.

1

Figure	Reflection
(-2, 6)	
(-2, 8)	
(-5, 8)	
(-5, 7)	
(-7, 7)	
(-7, 4)	
(-5, 4)	
(-5, 6)	

2

Figure	Reflection
(-3, 3)	
(-3, 6)	
(-4, 5)	
(-4, 8)	
(-7, 7)	
(-7, 5)	
(-6, 6)	
(-6, 3)	
(-7, 2)	
(-4, 2)	

3

Figure	Reflection
(2, 4)	
(2, 6)	

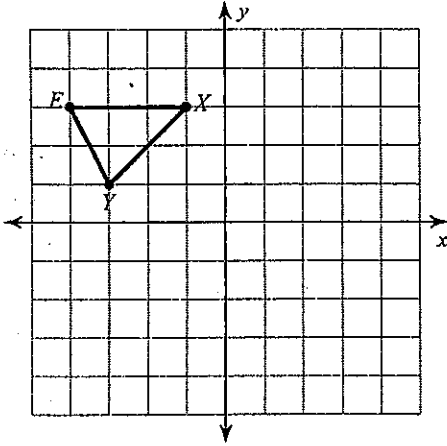
4

Figure	Reflection
(4, 5)	
(6, 7)	

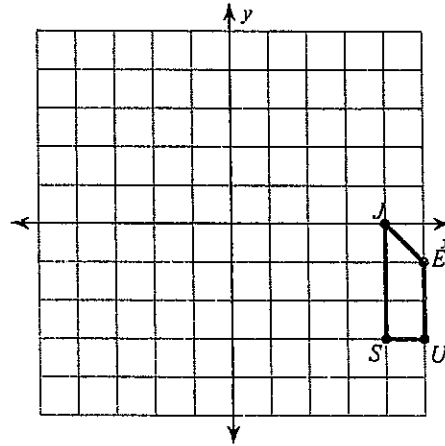
Reflections

Graph the reflection of the figure over the given AXIS.

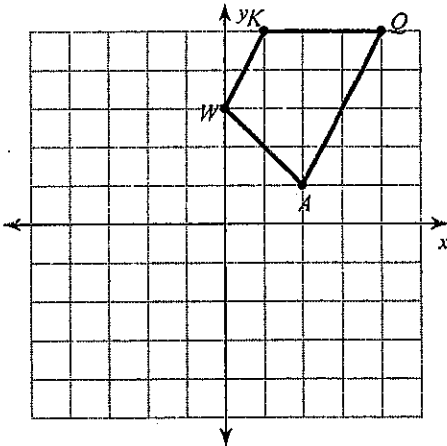
1) reflection across the x-axis



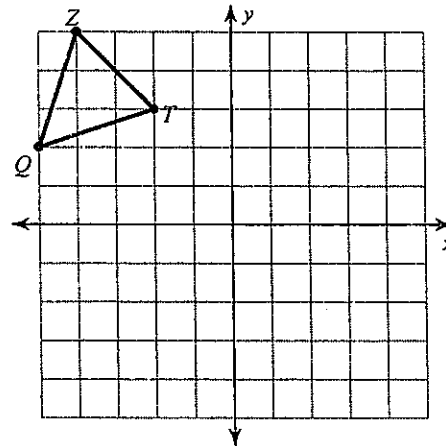
2) reflection across the y-axis



3) reflection across the y-axis

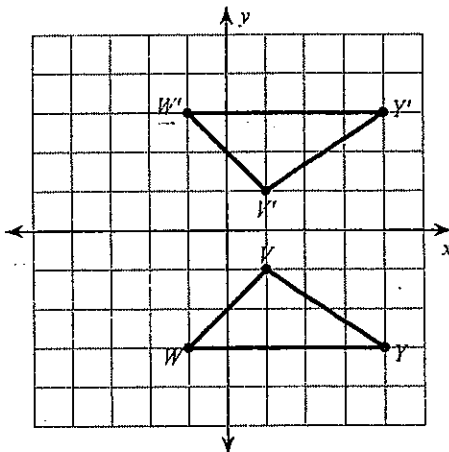


4) reflection across the x-axis

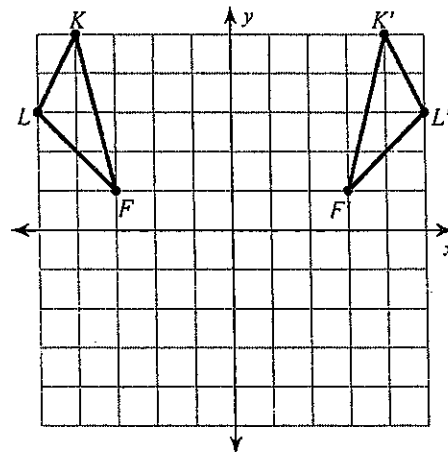


Write a rule in words to describe each reflection.

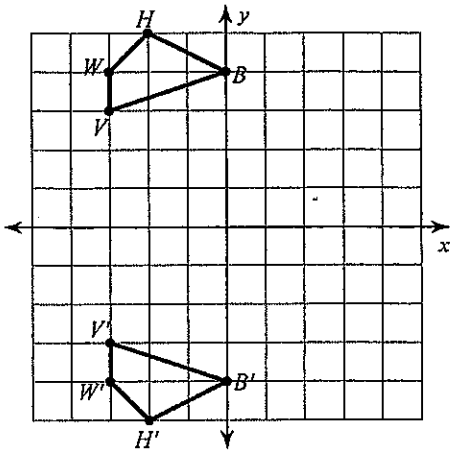
5)



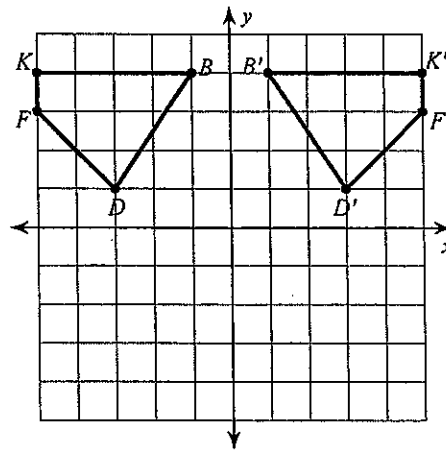
6)



7)

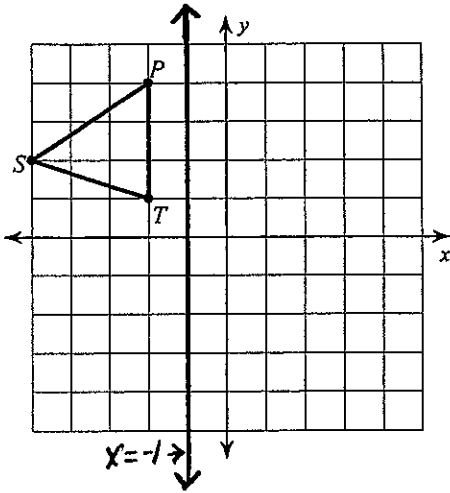


8)

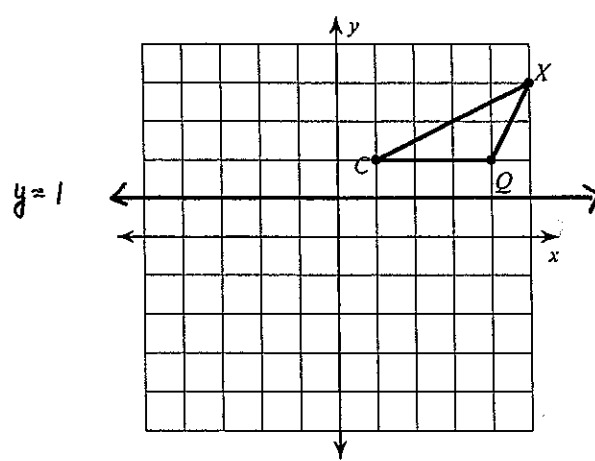


Graph the reflection across the given line- it may help to highlight the line of reflection.

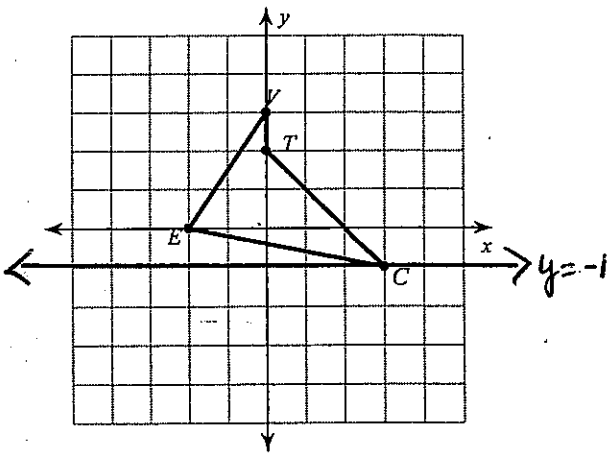
9) reflection across $x = -1$



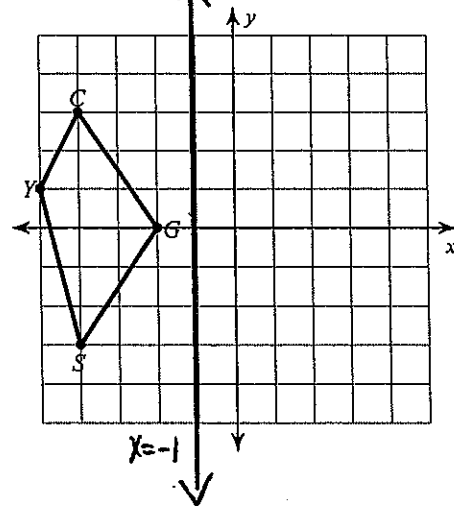
10) reflection across $y = 1$



11) reflection across $y = -1$

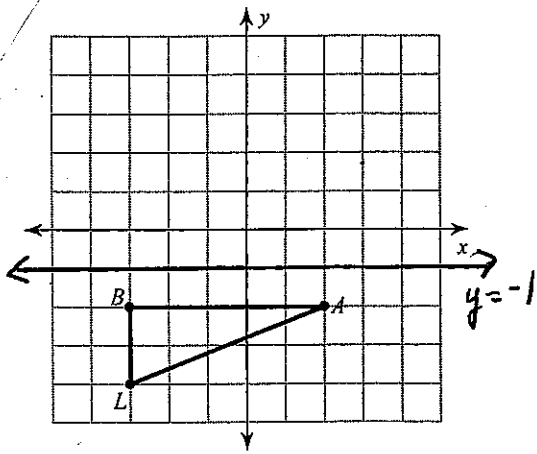


12) reflection across $x = -1$

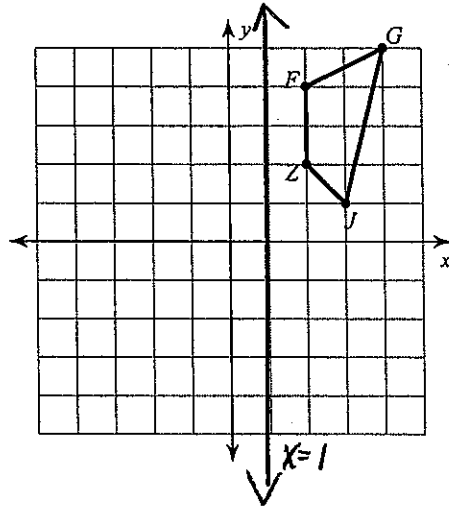


6

reflection across $y = -1$

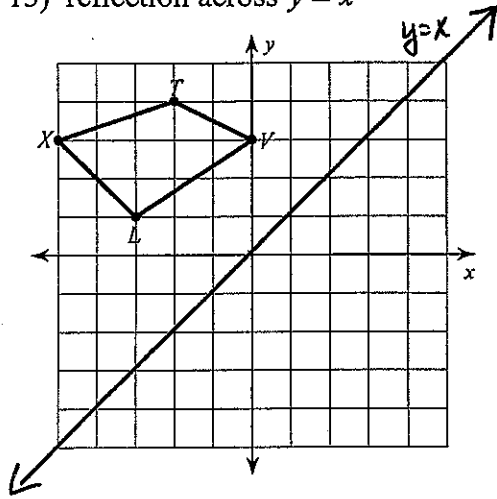


14) reflection across $x = 1$

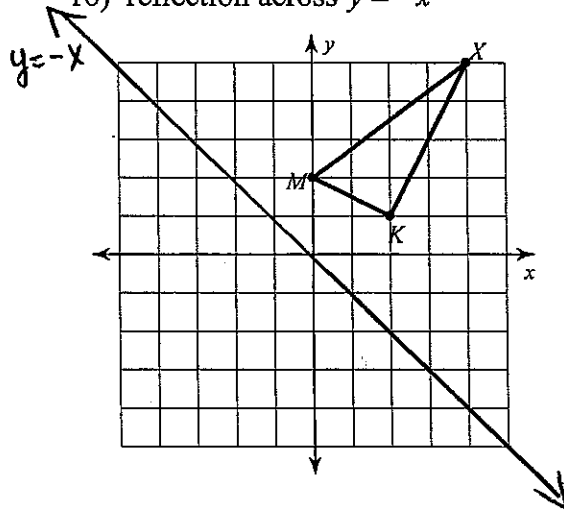


Graph the image of the figure using the transformation given.

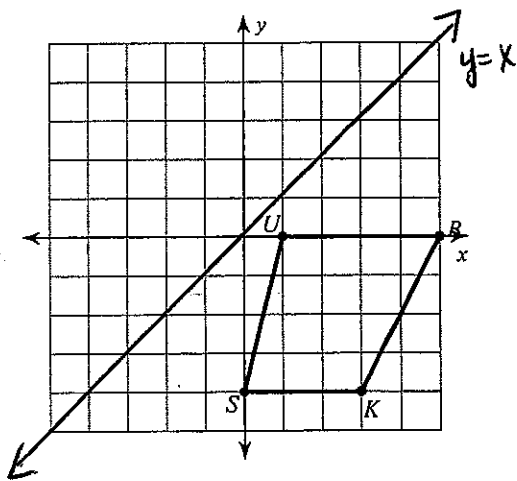
15) reflection across $y = x$



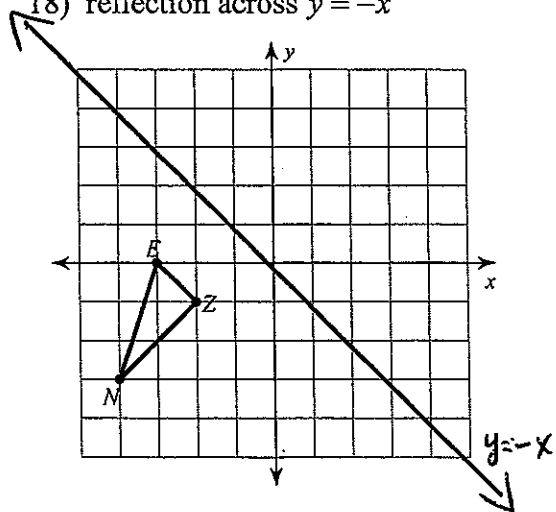
16) reflection across $y = -x$



17) reflection across $y = x$



18) reflection across $y = -x$



Find the new coordinates of the vertices of each figure after the given reflection (remember the rule)

19) reflection across the x-axis

$F(1, 4), R(3, 5), D(4, 4)$

20) reflection across the y-axis

$R(0, 1), U(2, 4), S(5, 2)$

21) reflection across the x-axis

$B(2, 4), R(2, 5), K(4, 3), U(4, 2)$

22) reflection across the y-axis

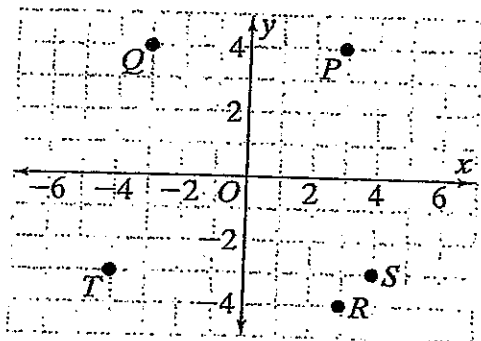
$N(0, -4), B(-2, -1), M(-1, -1), A(4, -3)$

Reflections

Practice

Circle the letter of the best answer.

Use the figure below for Questions 1–3.



- Which point is the image of P after reflection in the y -axis?

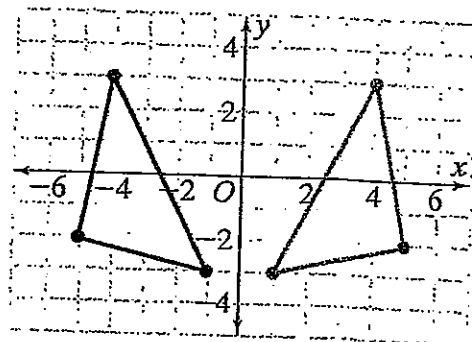
A	Q	C	S
B	R	D	T
- Which point is the image of R after reflection in the x -axis?

F	S	H	Q
G	P	J	T
- Which point is the image of T after reflection in the y -axis?

A	P	C	T
B	R	D	S
- The line \overline{AB} is reflected in the y -axis. Which relationship below describes the lengths of \overline{AB} and $\overline{A'B'}$?

F	Length of \overline{AB} is greater than $\overline{A'B'}$.
G	Length of \overline{AB} is less than $\overline{A'B'}$.
H	Length of \overline{AB} is equal to $\overline{A'B'}$.
J	Lengths of \overline{AB} and $\overline{A'B'}$ are not related.

Use the figure below for Questions 5–6.



- Which transformation is shown above?

A	reflection in the x -axis
B	reflection in the y -axis
C	reflection in the line $y = x$
D	reflection in the line $y = 1$
- Which rule describes the reflection of the figure shown above?

F	$(x, y) \rightarrow (-x, y)$
G	$(x, y) \rightarrow (y, x)$
H	$(x, y) \rightarrow (x, -y)$
J	$(x, y) \rightarrow (-x, -y)$
- The point $P(0, 1)$ is reflected in the x -axis. Which point below is the image of P ?

A	$(0, -1)$	C	$(-1, 0)$
B	$(1, 0)$	D	$(1, -1)$
- A right triangle is reflected in the x -axis. In the triangle, $m\angle A = 90^\circ$. Which relationship below describes the reflected angle?

F	$m\angle A' > 90^\circ$	H	$m\angle A' = 90^\circ$
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