

Transformations on the Coordinate Plane

Reflection over the x-axis

Example 1:

x	y
-4	1
-3	5
-2	3

 \rightarrow

x	y
-4	-1
-3	-5
-2	-3

Reflection over the x-axis

Problem 1A:

x	y
-5	4
-5	2
-1	2
-1	4

 \rightarrow

x	y

Problem 1B:

x	y
-5	1
-4	3
-1	4
-1	1

 \rightarrow

x	y

Reflection over the y-axis

Example 2:

x	y
-4	1
-3	5
-2	3

 \rightarrow

x	y
4	1
3	5
2	3

Reflection over the y-axis

Problem 2A:

x	y

 \rightarrow

x	y

Problem 2B:

x	y

 \rightarrow

x	y

Translation using the rule $(x, y) \rightarrow (x + 2, y - 4)$

Example 3:

x	y
-4	1
-3	5
-2	3

 \rightarrow

x	y
-2	-3
-1	1
0	-1

Translation $(x, y) \rightarrow (x + 2, y - 4)$

Problem 3A:

x	y

 \rightarrow

x	y

Problem 3B:

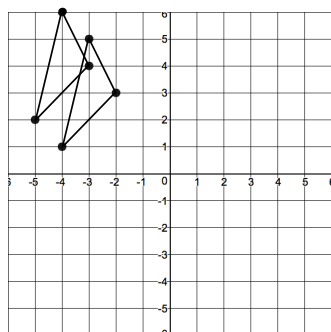
x	y

 \rightarrow

x	y

Translation using the rule $(x, y) \rightarrow (x - 1, y + 1)$

Example 4:



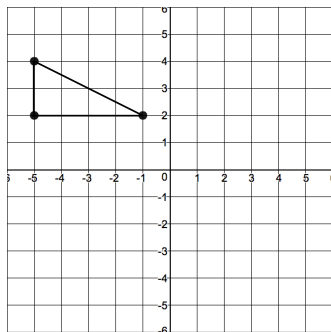
x	y
-4	1
-3	5
-2	3

 \rightarrow

x	y
-5	2
-4	6
-3	4

Translation
 $(x, y) \rightarrow (x - 1, y + 1)$

Problem 4A:

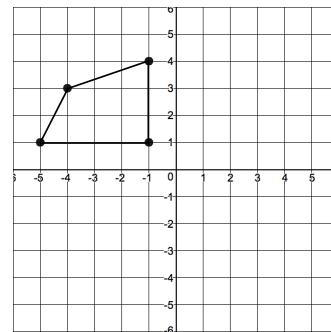


x	y

 \rightarrow

x	y

Problem 4B:



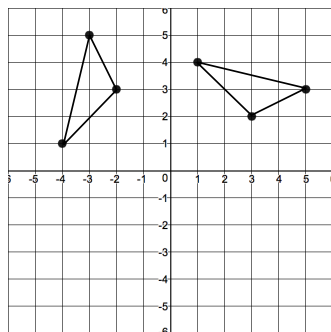
x	y

 \rightarrow

x	y

Rotation 90°

Example 5:



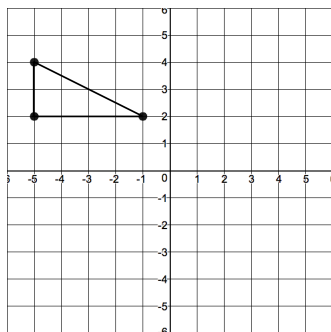
x	y
-4	1
-3	5
-2	3

 \rightarrow

x	y
1	4
5	3
3	2

Rotation 90°

Problem 5A:

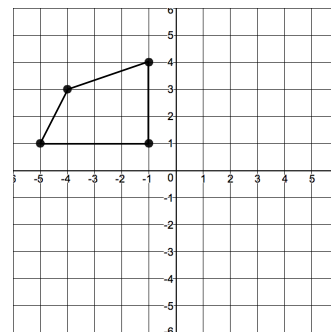


x	y

 \rightarrow

x	y

Problem 5B:



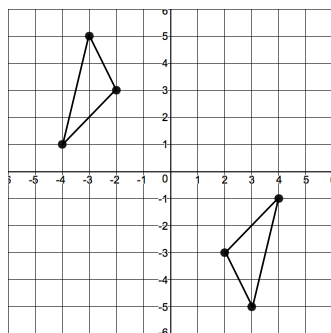
x	y

 \rightarrow

x	y

Rotation 180°

Example 6:



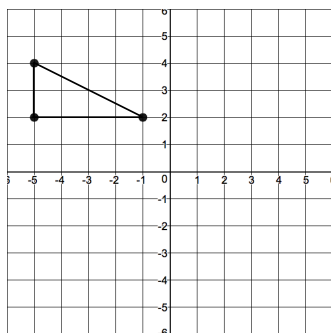
x	y
-4	1
-3	5
-2	3

 \rightarrow

x	y
4	-1
3	-5
2	-3

Rotation 180°

Problem 6A:

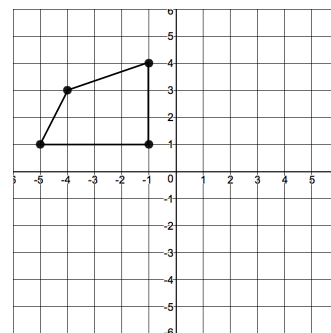


x	y

 \rightarrow

x	y

Problem 6B:



x	y

 \rightarrow

x	y