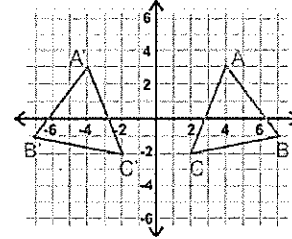


REFLECTIONS

Reflections: a movement of a figure that involves flipping the figure over the give line of reflection

The new prime points will be the same distance from the line of reflection as the original points but on opposite side of the line of reflection (also known as line of symmetry)



Types of Reflection

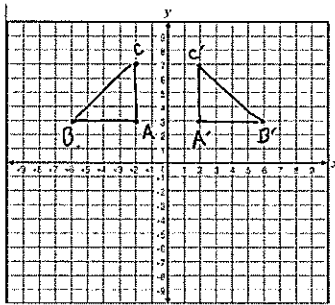
Reflecting over y-axis:

Example: Plot points A(-2,3), B(-6,3), and C(-2,7)

Step 1: Plot original points

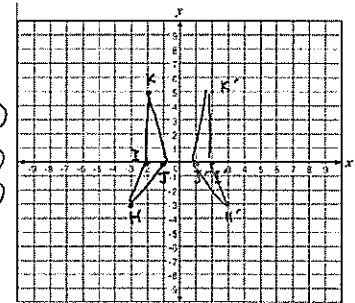
Step 2: From each original point, count the number of units from the y-axis and move the same distance on the opposite side of the y-axis

Step 3: List the new 'prime' ordered pairs



Reflect over y-axis

Original	Prime
J(-1,0)	J'(1,0)
I(-2,0)	I'(2,0)
H(-3,-3)	H'(3,-3)
K(-2,5)	K'(2,5)



Types of Reflection

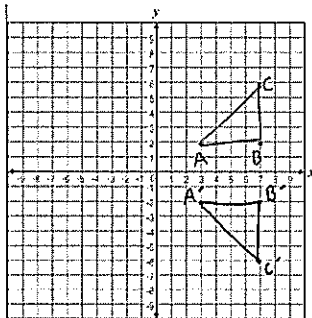
Reflecting over x-axis

Example: Plot points A(3,2), B(7,2), and C(7,6)

Step 1: Plot original points

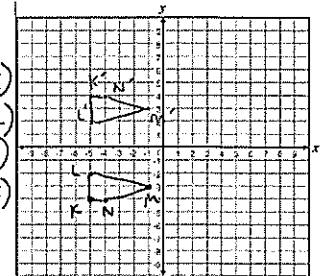
Step 2: From each original point, count the number of units from the x-axis and move the same distance on the opposite side of the x-axis

Step 3: List the new 'prime' ordered pairs



Reflect over x-axis

Original	Prime
K(-5,-4)	K'(-5,4)
L(-5,-2)	L'(-5,2)
M(-1,-3)	M'(-1,3)
N(-4,-4)	N'(-4,4)



Notes - Reflections

Types of Reflections

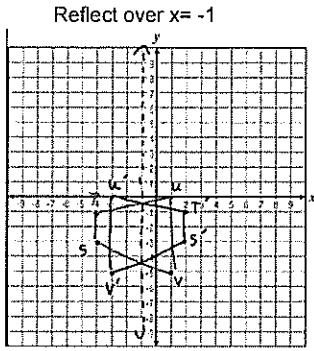
Reflecting over a line:

Example: Plot points S(-4,-3), T(-4,-1), U(1,0), and V(1,-5)

Step 1: Plot original points

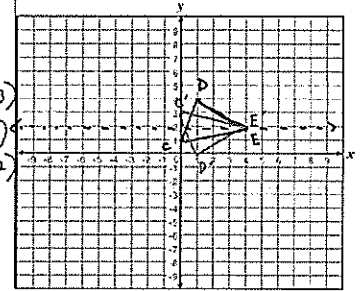
Step 2: From each original point, count the number of units from the line and move the same distance on the opposite side of the line

Step 3: List the new 'prime' ordered pairs



Reflect over $y = 2$

Original	Prime
C(0,1)	C'(0,3)
D(1,4)	D'(1,0)
E(4,2)	E'(4,2)



Method 2:

When reflecting over the **x-axis**, the x value will stay the same and the y value will become its opposite.

When reflecting over the **y-axis**, the y value will stay the same and the x value become its opposite.

Without a Graph: Example 1

Plot points A(-2, 3), B(-6, 3), and C(-2, 7) and reflect over the x-axis:

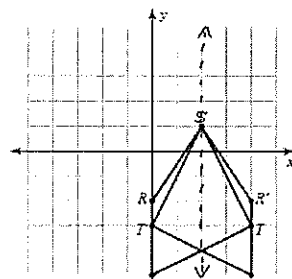
~~A(-2, 3) reflected over the x-axis A' _____~~
~~B(-6, 3) reflected over the x-axis B' _____~~
~~C(-2, 7) reflected over the x-axis C' _____~~

Without a Graph: Example 2

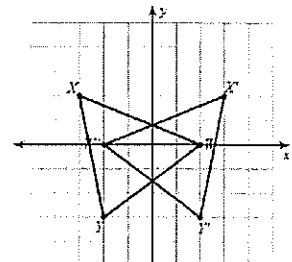
Plot points A(-2, 3), B(-6, 3), and C(-2, 7) and reflect over the y-axis:

~~A(-2, 3) reflected over the y-axis A' _____~~
~~B(-6, 3) reflected over the y-axis B' _____~~
~~C(-2, 7) reflected over the y-axis C' _____~~

Describe the rule of reflection:



reflect across $x = 2$



reflect across y-axis