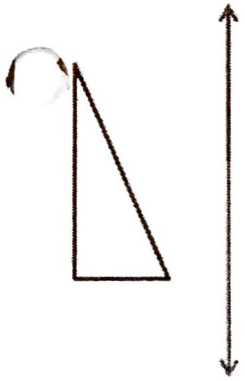
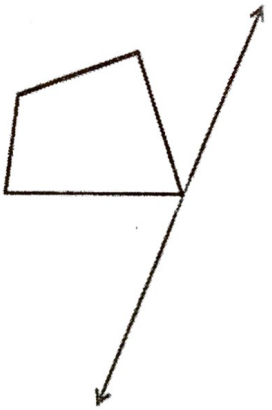
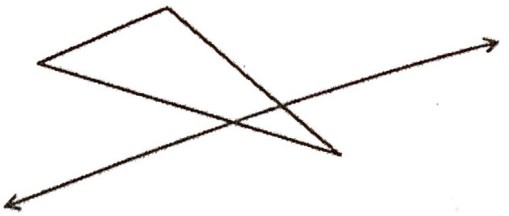
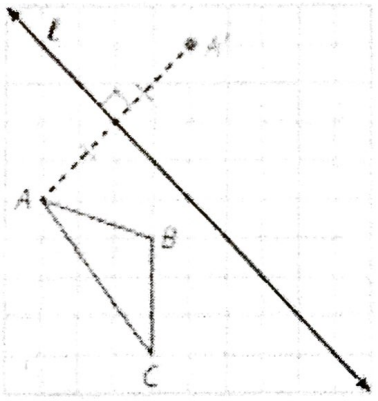
# Reflection Notes

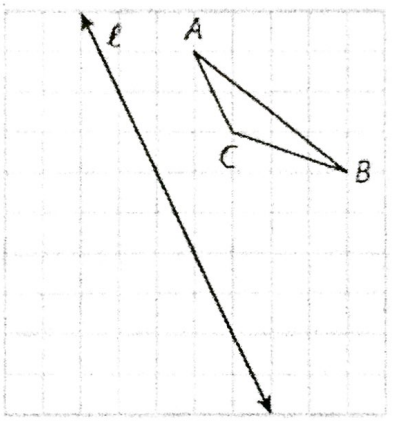


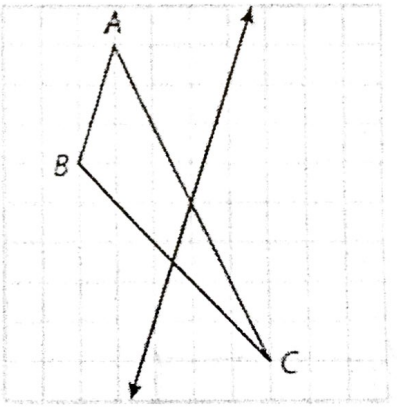




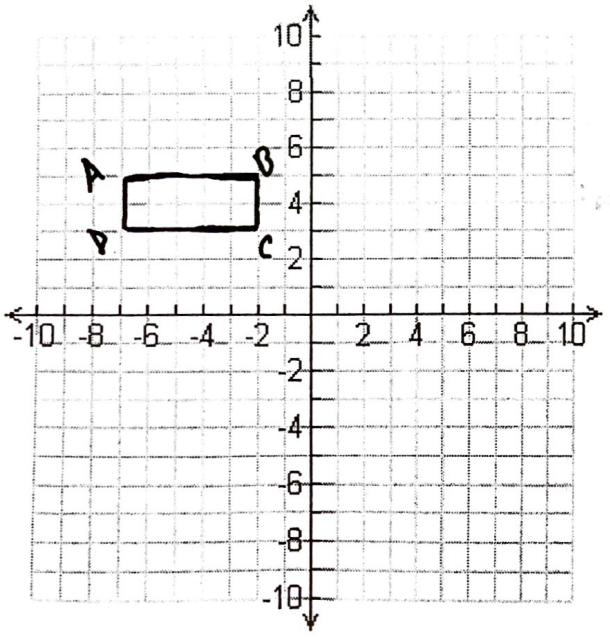
Perpendicular lines in the coordinate plane have:



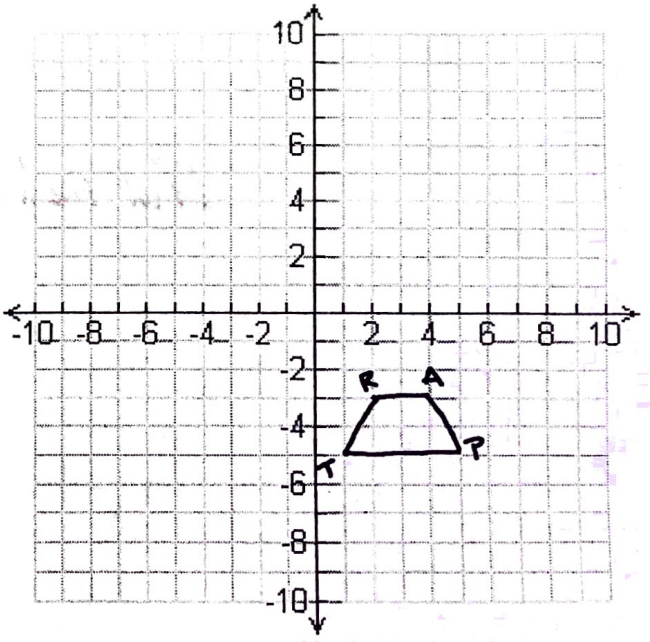




**Reflection across the x-axis**



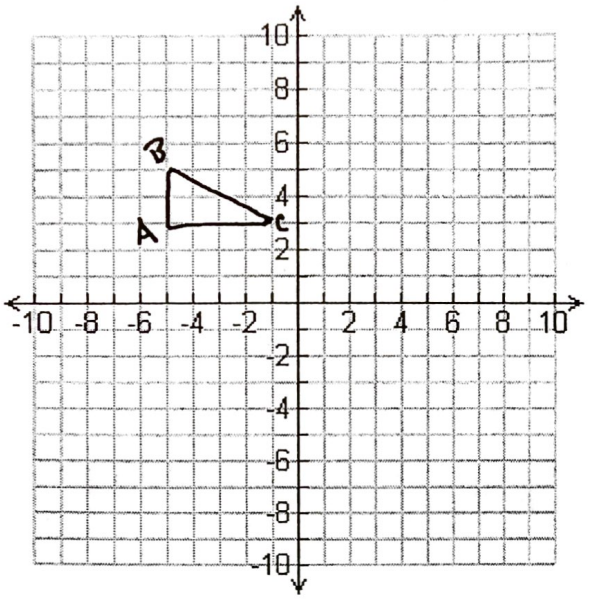

Coordinate Notation:

**Reflection across the y-axis**



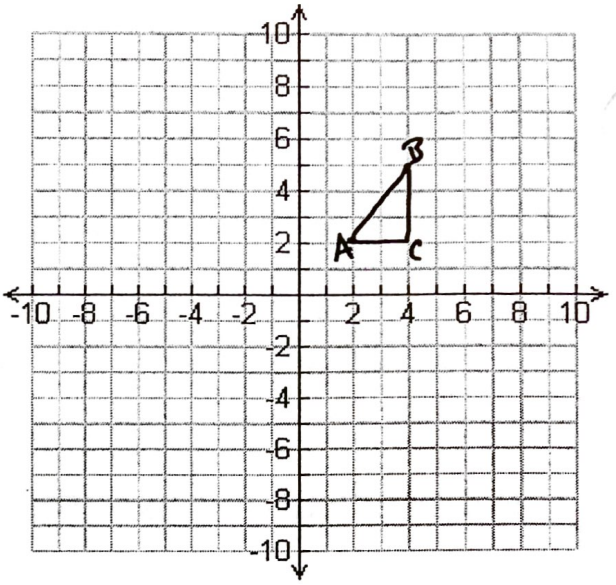

Coordinate Notation:

## Reflection across y = x



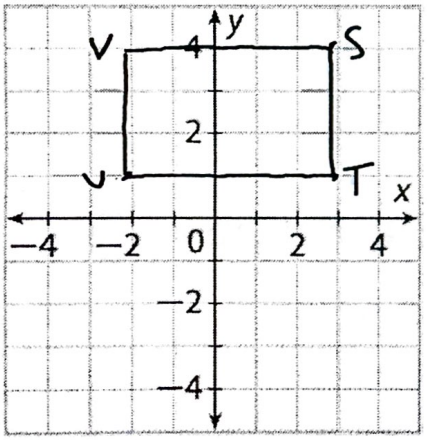

Coordinate Notation:

## Reflection across y = -x

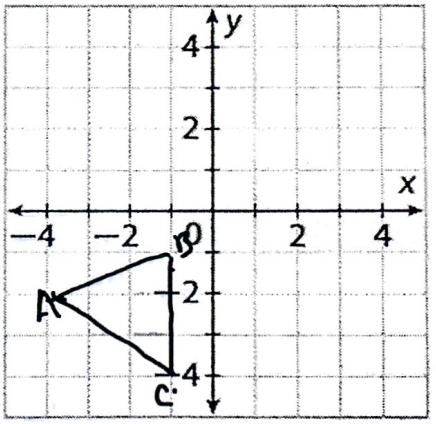



Coordinate Notation:

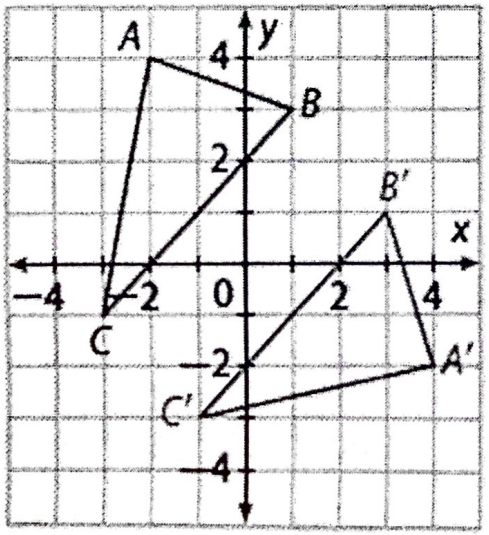
$S(3, 4)$, $T(3, 1)$, $U(-2, 1)$, $V(-2, 4)$; $x$-axis

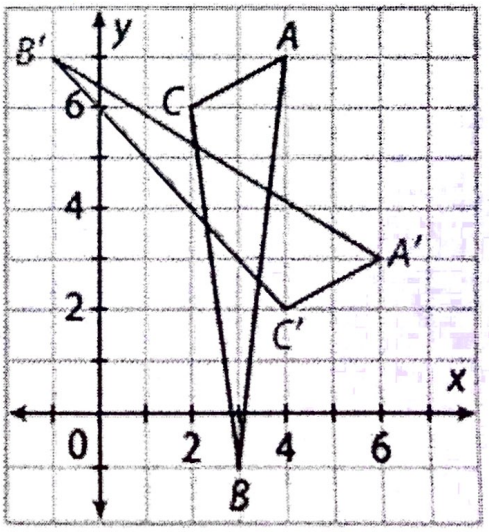



$A(-4, -2)$, $B(-1, -1)$, $C(-1, -4)$; $y = -x$

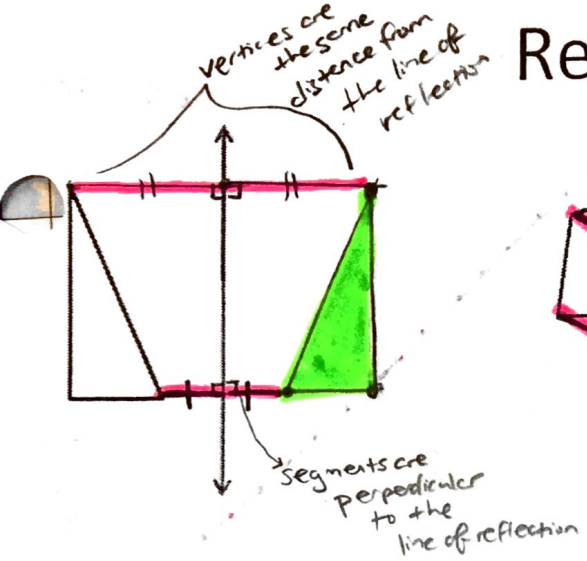


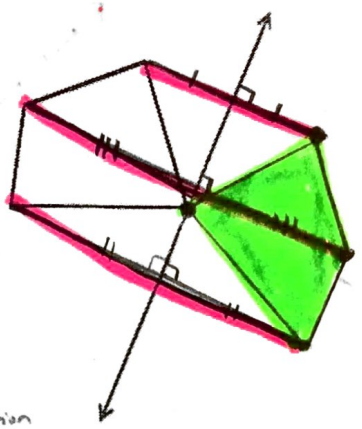

Find the line of reflection:

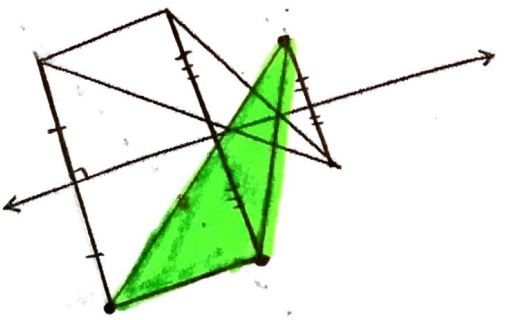


# Reflection Notes



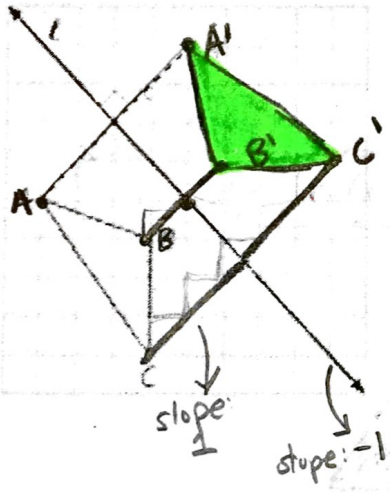



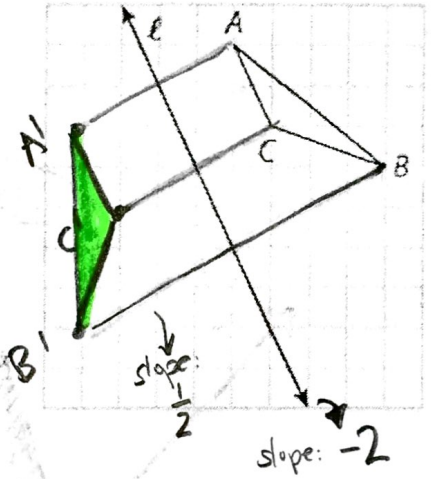


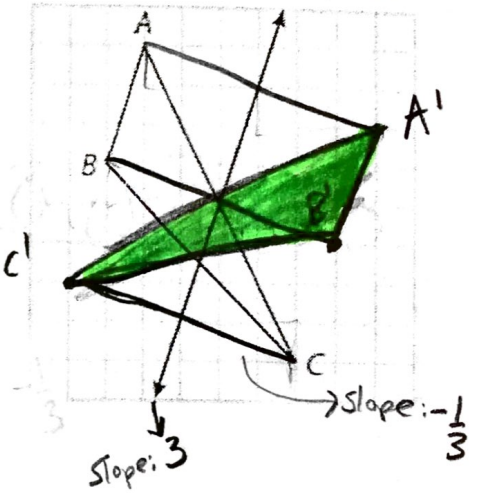
Perpendicular lines in the coordinate plane have:

Opposite reciprocal slopes

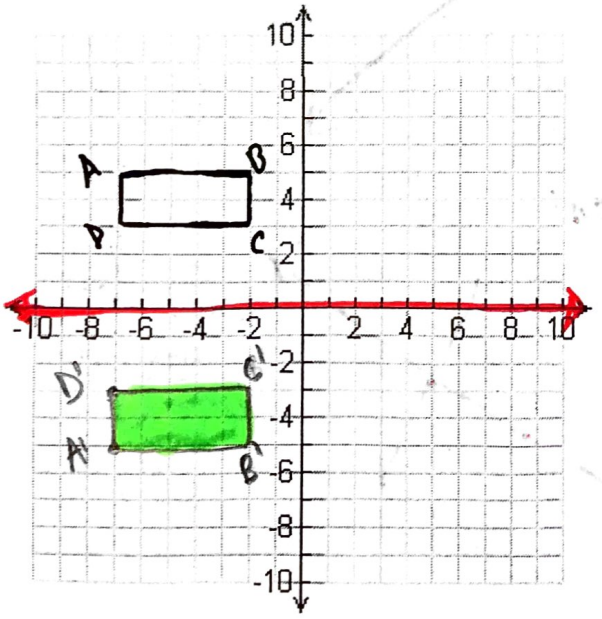
ex: if a line has slope $\frac{1}{2}$, the line perpendicular has a slope of $-2$



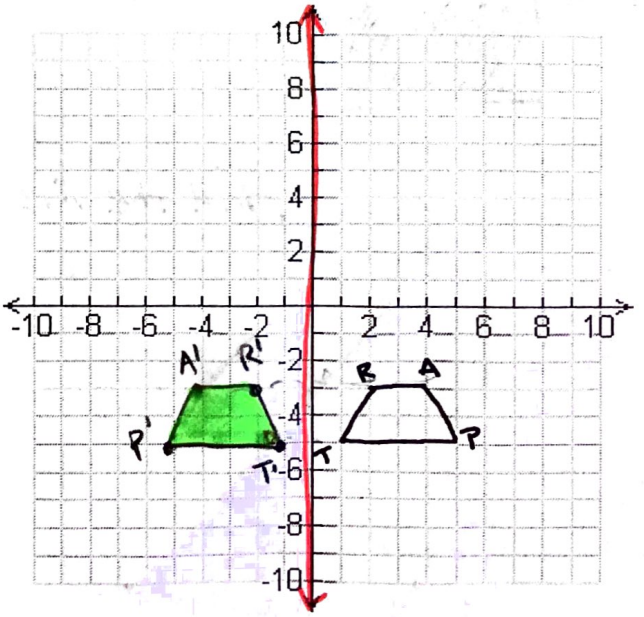

**Reflection across the x-axis**



Coordinate Notation:

$(x, y) \rightarrow (x, -y)$

**Reflection across the y-axis**

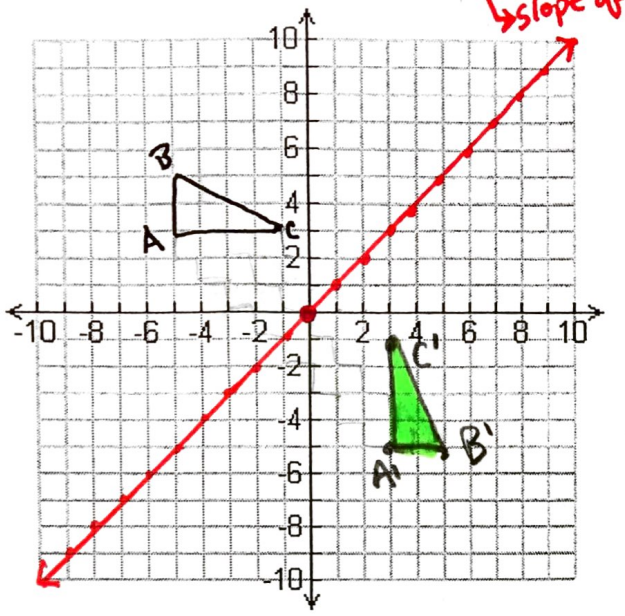


Coordinate Notation:

$(x, y) \rightarrow (-x, y)$

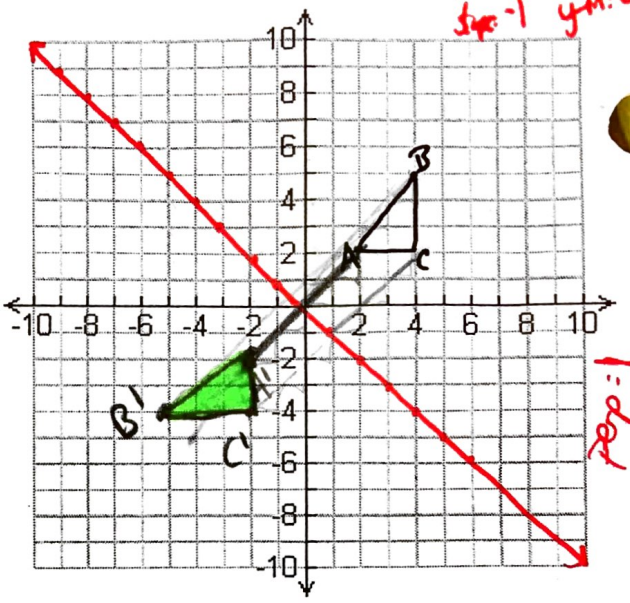
## Reflection across y = x + 0

↳ slope of 1




## Reflection across y = -x

slope: -1 y-int: 0



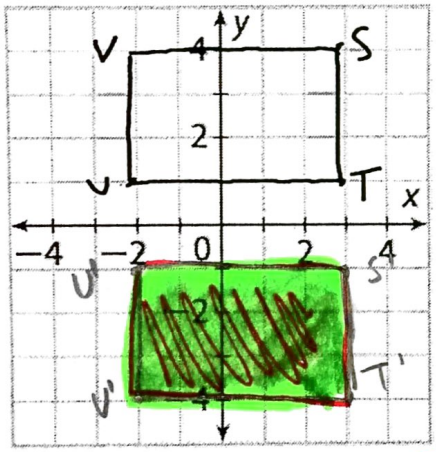

perp: 1

### Coordinate Notation:

A(-5,3) A'(3,-5)
B(-5,5) B'(5,-5)
C(-1,3) C'(3,-1)

$(x,y) \rightarrow (y,x)$

$S(3, 4)$, $T(3, 1)$, $U(-2, 1)$, $V(-2, 4)$; $x$-axis

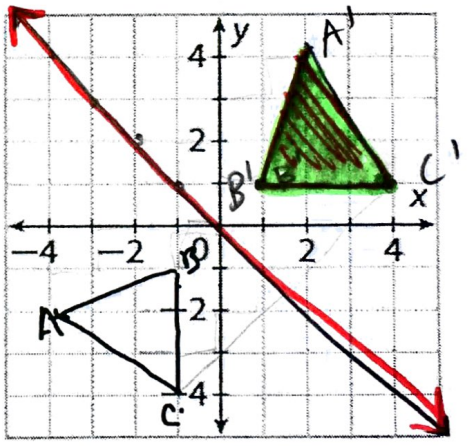



### Coordinate Notation:

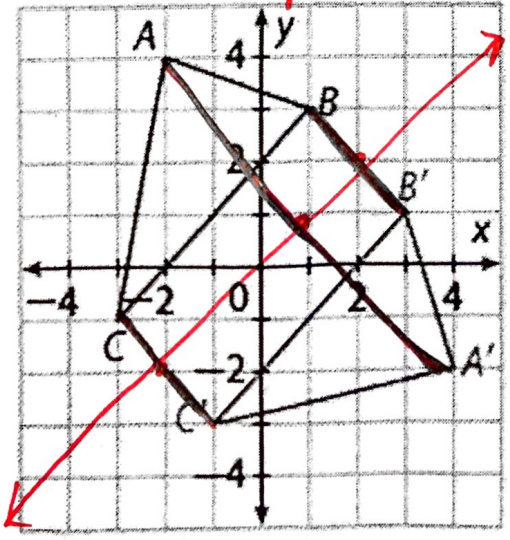
A(2,2) A'(-2,-2)
B(4,5) B'(-5,-4)
C(4,2) C'(-2,-4)

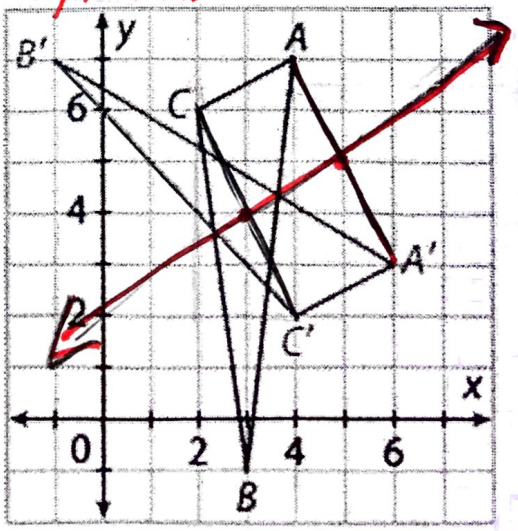
$(x,y) \rightarrow (-y,-x)$

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




## Find the line of reflection:




(4,7) (6,3)

$\frac{4+6}{2}, \frac{7+3}{2}$

(5, 5)