Do Now

1. Complete the translation of Point A (-3, 4) under $T_{(2,-6)}$.

Right 2 Down 6

$(x,y) \rightarrow (x+2, y-6)$

$A(-3,4) \rightarrow A'(-3+2, 4-6)$

$A'(-1, -2)$

2. If a translation maps (x, y)⟶(x - 3, y + 2), what are the coordinates of C', the image of point C (2, -3) after this translation?

$C(2,-3) \rightarrow C'(2-3, -3+2)$

$C'(-1, -1)$

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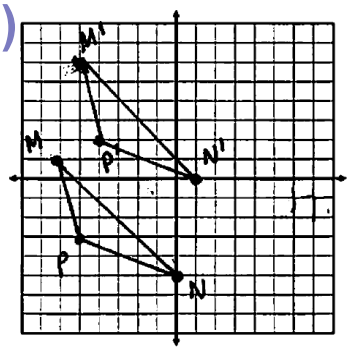
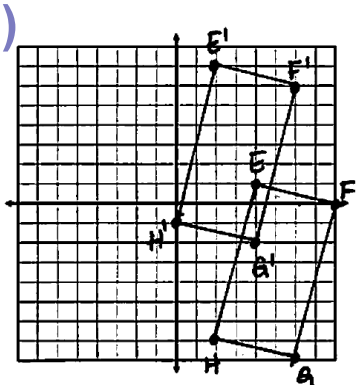
Homework Answers

1)



M'(-5, 6)
N'(1, 0)
P'(-4, 2)

2)



E'(2, 7)
F'(6, 6)
G'(4, -2)
H'(0, -1)

3) Left 5, Up 4

(x, y)→(x - 5, y + 4)

4) Right 1, Up 8

(x, y)→(x + 1, y + 8)

5) (x, y)→(x - 9, y - 4)

6) (x, y)→(x + 7, y + 2)

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Geometric Transformations - Reflections

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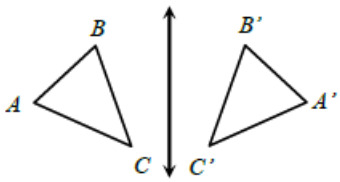
Reflections

Line of Reflection

- the line you "flip" an object over



- the original point and its image are the same distance from the line of reflections

Reflection Rules

x- axis as your line of reflection

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

y - axis as your line of reflection

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

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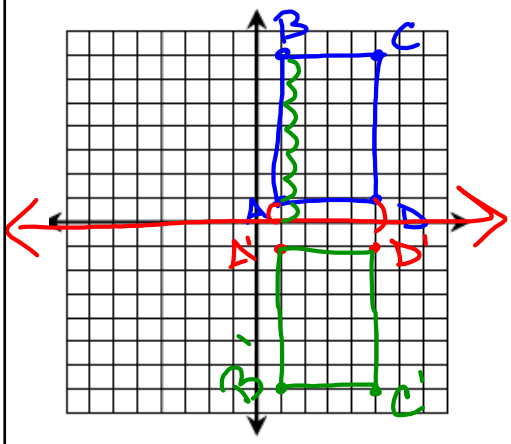
Rectangle $ABCD$ with vertices $A(1, 1)$, $B(1, 7)$, $C(5, 7)$, and $D(5, 1)$: **x-axis**



$A'(1, -1)$

$B'(1, -7)$

$C'(5, -7)$

$D'(5, -1)$

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

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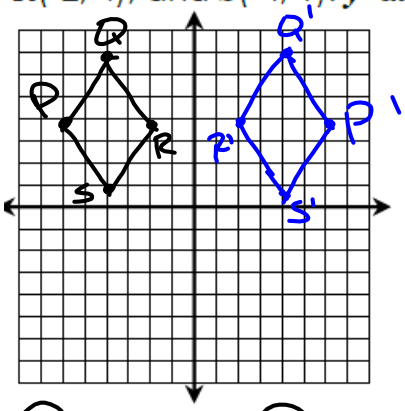
Rhombus $PQRS$ with vertices $P(-6, 4)$, $Q(-4, 7)$, $R(-2, 4)$, and $S(-4, 1)$: **y-axis**



$P'(\_\_\_, \_\_\_)$

$Q'(\_\_\_, \_\_\_)$

$R'(\_\_\_, \_\_\_)$

$S'(\_\_\_, \_\_\_)$

Reflection Rule

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

$P(-6, 4) \rightarrow P'(6, 4)$

$Q(-4, 7) \rightarrow Q'(4, 7)$

$R(-2, 4) \rightarrow R'(2, 4)$

$S(-4, 1) \rightarrow S'(4, 1)$

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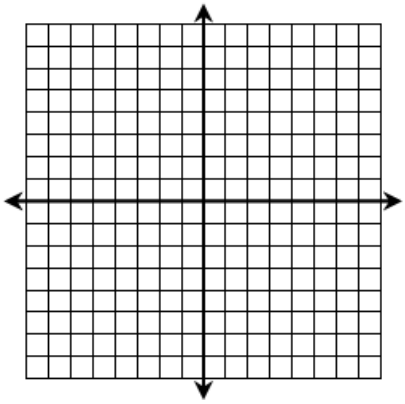
Triangle WXY with vertices $W(-3, -2)$, $X(2, -1)$, and $Y(-4, -8)$: **x-axis**



W'(____, ____)

X'(____, ____)

Y'(____, ____)

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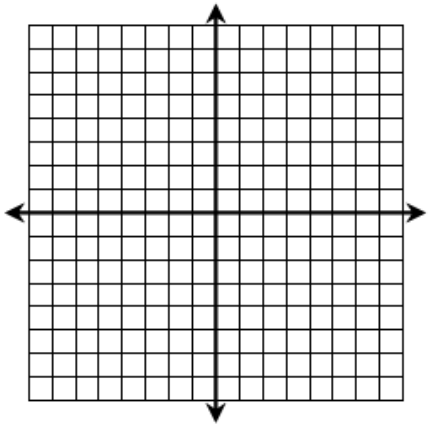
Square $JKLM$ with vertices $J(1, -2)$, $K(6, 0)$, $L(8, -5)$, and $M(3, -7)$: **y-axis**



J'(____, ____)

K'(____, ____)

L'(____, ____)

M'(____, ____)

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