TRANSFORMATIONS

TRANSLATIONS

↳ Slides

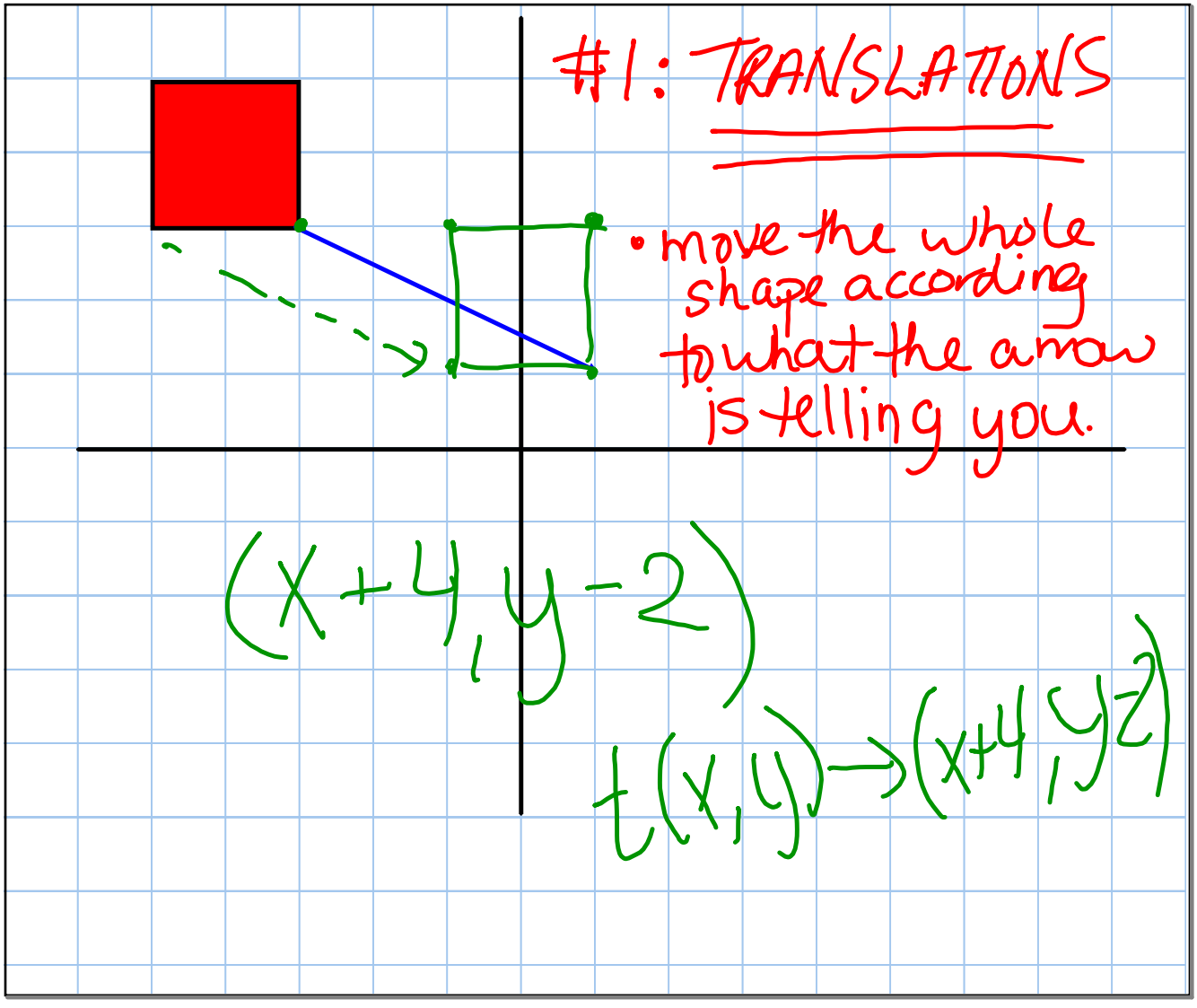
ROTATIONS

↳ Turns

REFLECTIONS

↳ Flips

February 12, 2015



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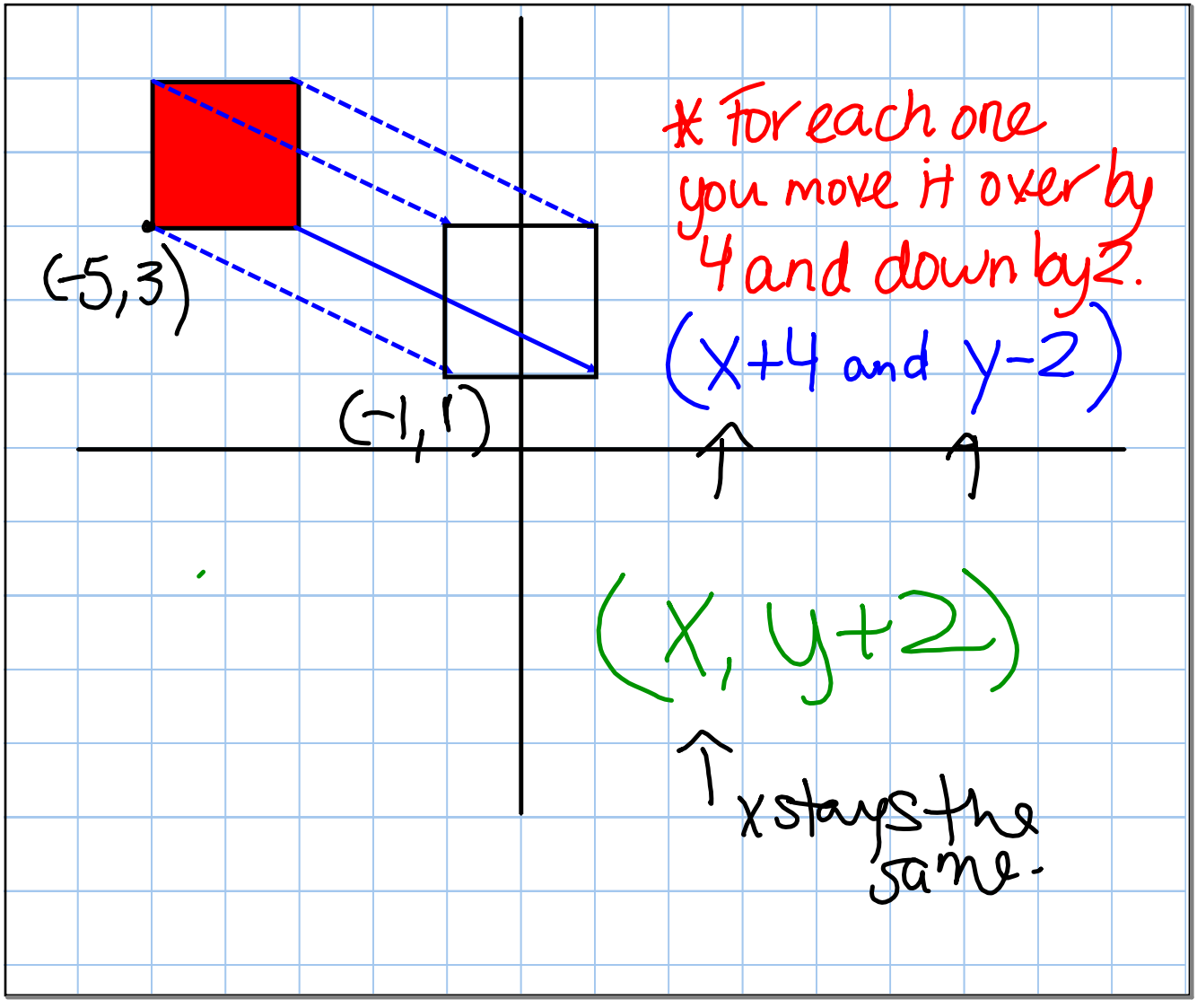

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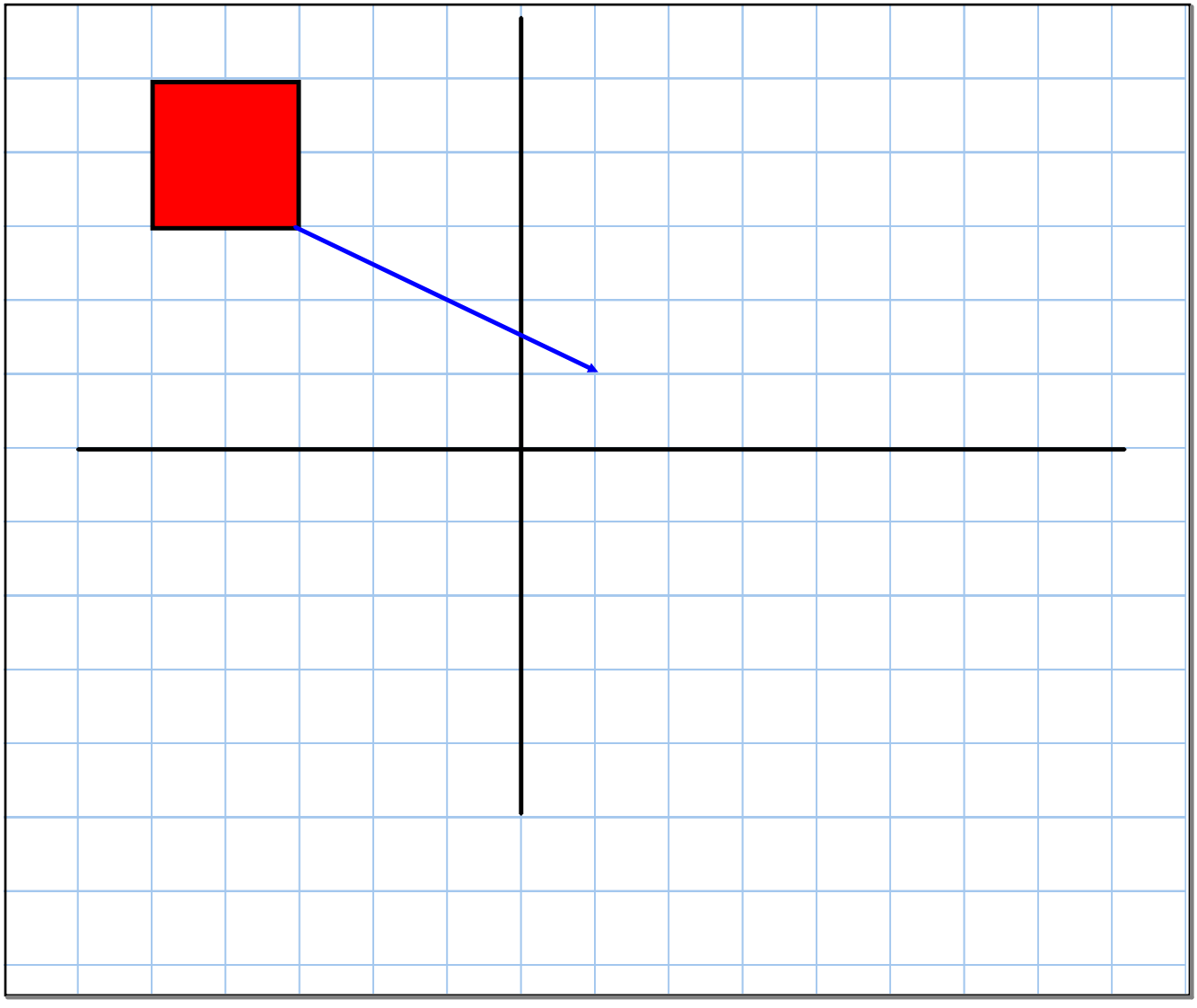
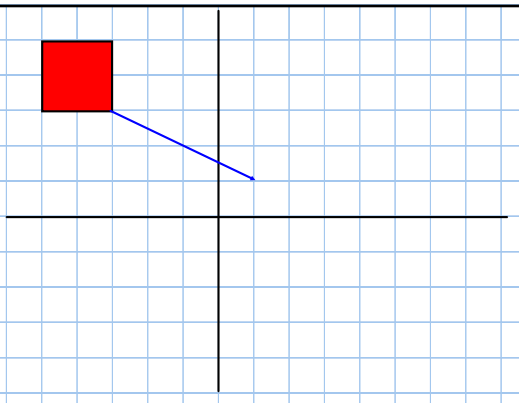
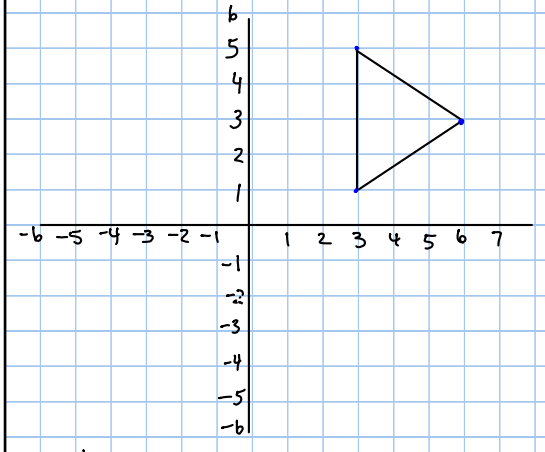




ROTATIONS: Turning your shape (either by 90° or 180°)



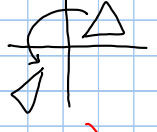
How do we do this??

RULES FOR ROTATIONS

① 90° rotation:

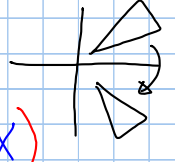
$(x,y) \rightarrow (-y,x)$

② 180° rotation:



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

③ 270° rotation: (or −90°)



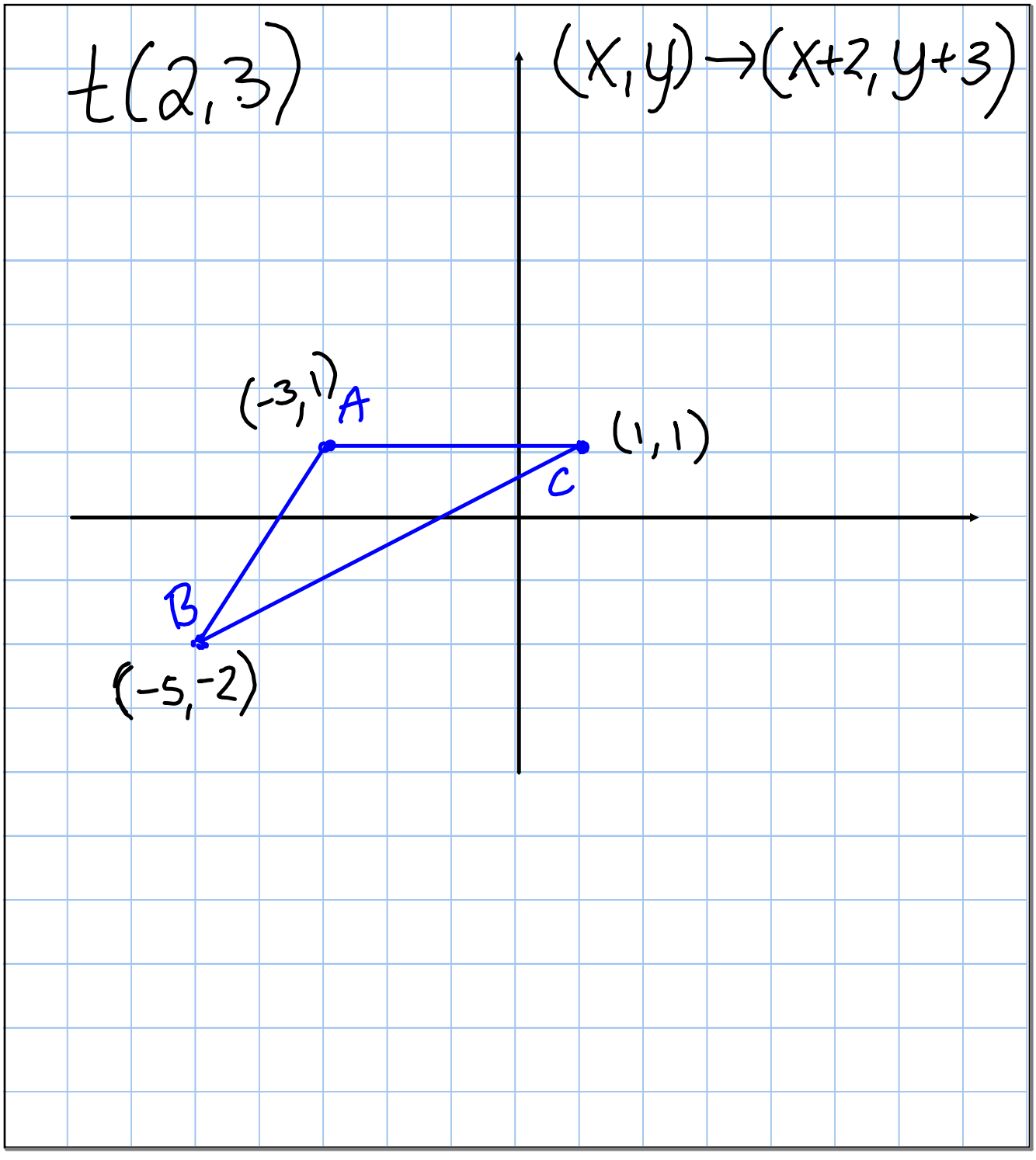
$(x,y) \rightarrow (y,-x)$

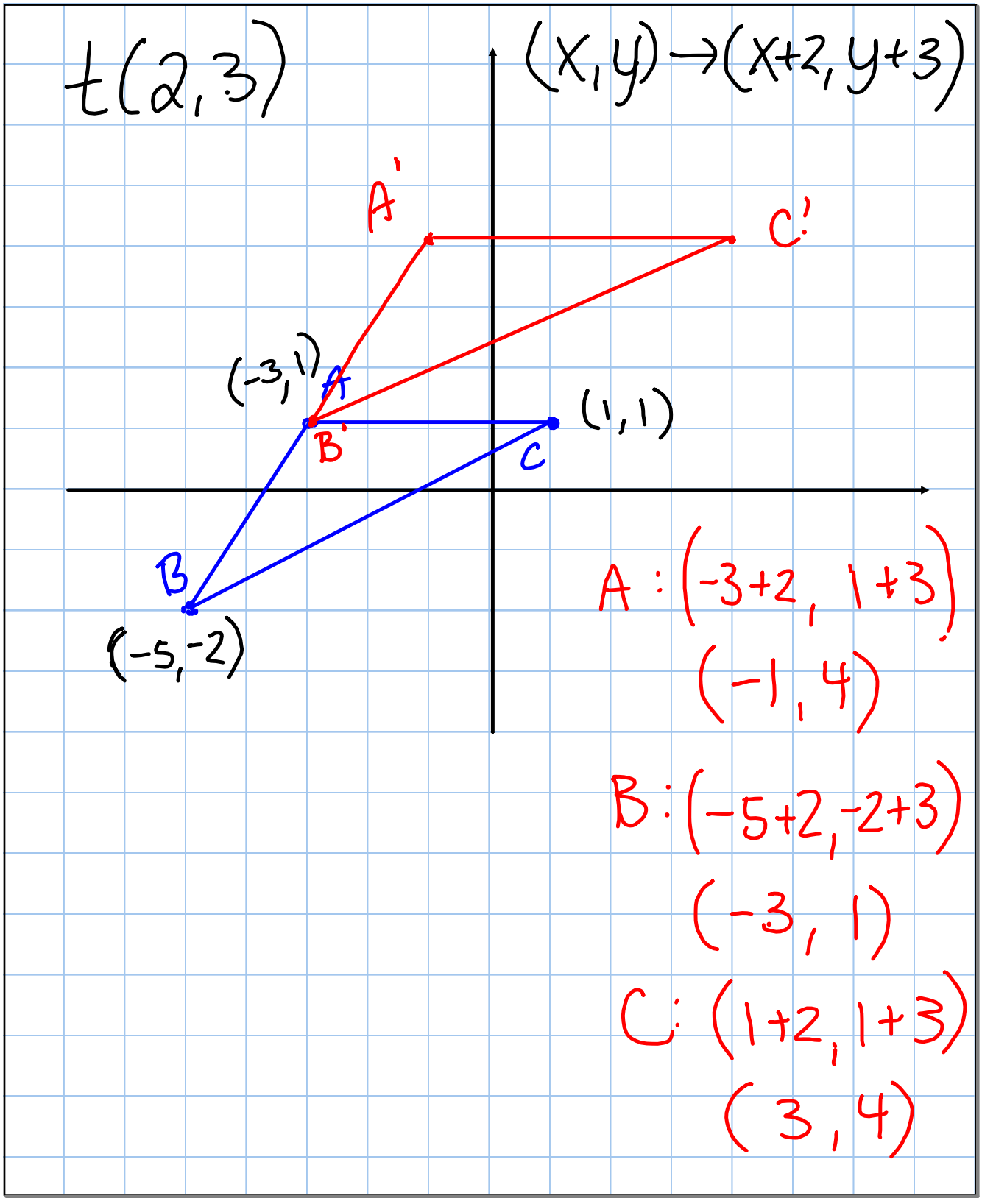
REVIEW

① Translations (FLIP)

EX: $t(2,3) \longrightarrow (x+2, y+3)$

→ You take the coordinates of each of your points and add 2 to the x-value and 3 to the y-value


t(2,3)
(x,y)→(x+2,y+3)
(-3,1)
A
(1,1)
C
B
(-5,-2)

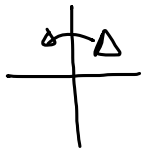

t(2,3)
(x,y)→(x+2,y+3)
A'
C'
(-3,1)
A
B'
(1,1)
C
B
(-5,-2)
A: (-3+2, 1+3)
(-1, 4)
B: (-5+2, -2+3)
(-3, 1)
C: (1+2, 1+3)
(3, 4)

② Rotations (TURNS)

RULES

You just need to follow these every time and you're set!

r 90° : You are going one quadrant C.C.W. (counter-clockwise)



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

EX: $(2, -3) \rightarrow (3, 2)$

r 180° : You are going 2 quadrants (or directly across

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

EX: $(5, -12) \rightarrow (-5, 12)$

r -90° (A.K.A. +270°) : You are moving one quadrant C.W. (clockwise)

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

EX: $(6, 2) \rightarrow (2, -6)$

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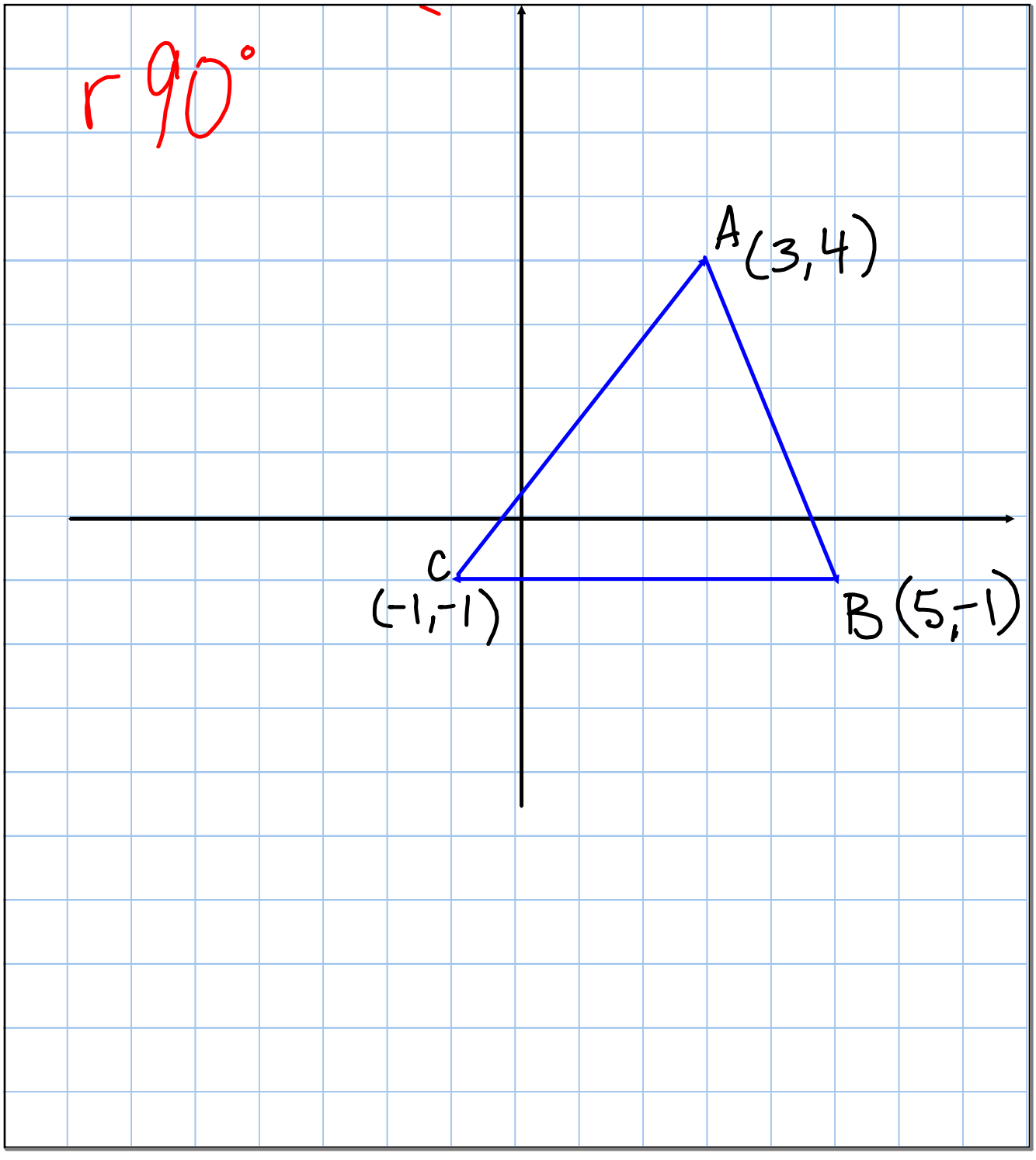

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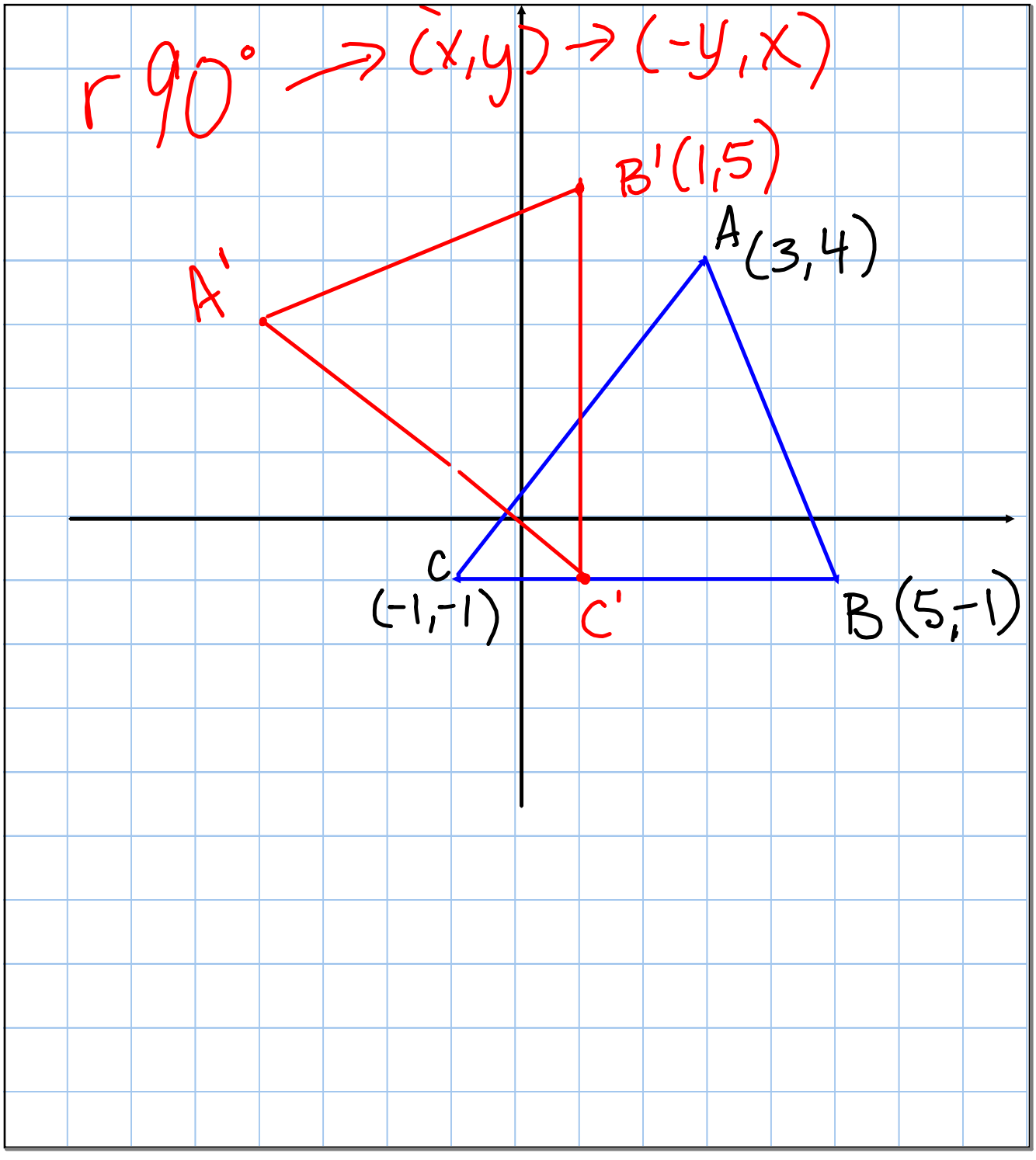


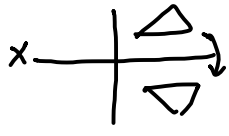
NEW:

Reflections (FLIP)

RULES

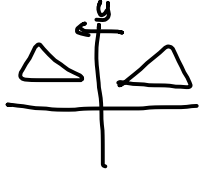
$\triangle_X$: flip over the x-axis

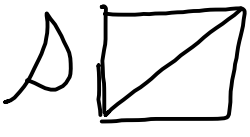
$(x,y) \rightarrow (x,-y)$



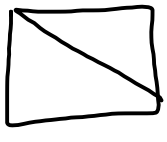
$\triangle_Y$: flip over the y-axis

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

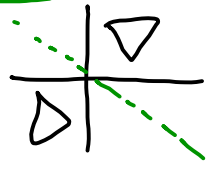


$\triangle$  flip over fist quadrant bisector

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

$\triangle$  : flip over 2nd quadrant bisector

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



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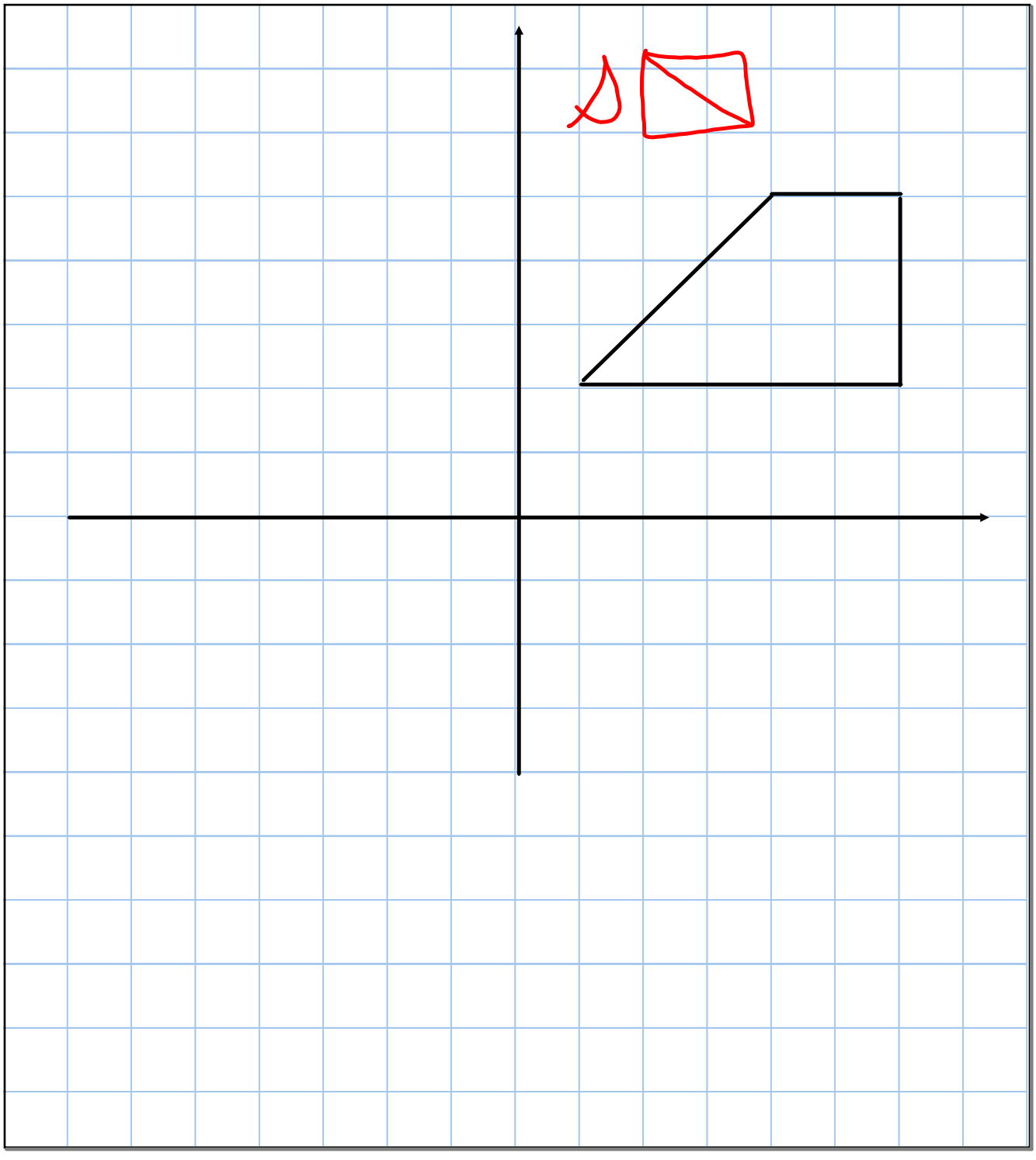
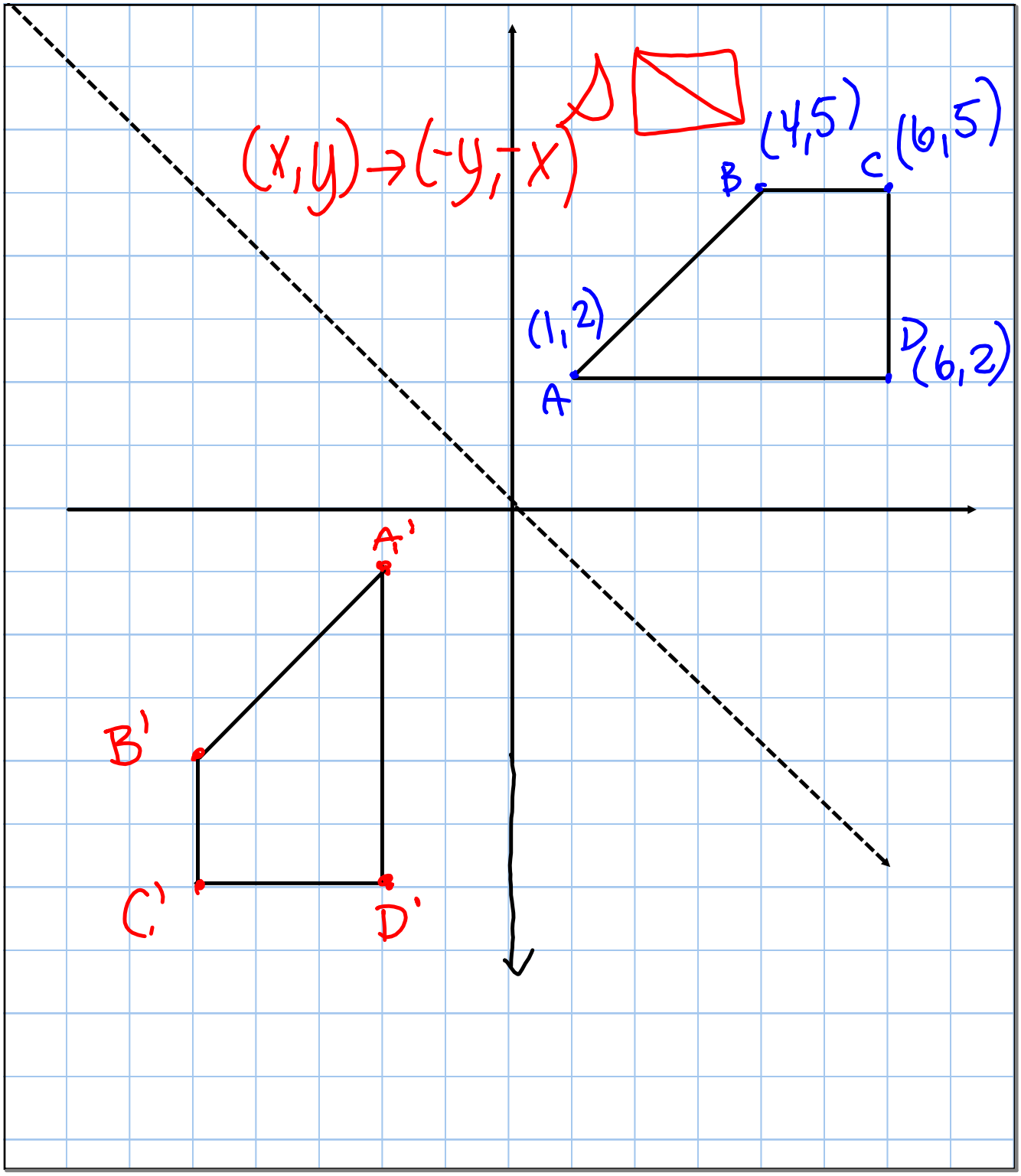
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