

L3 Tougher Reflections.notebook

Warm Up:

- Determine the equation of the line perpendicular to $y = 3x + 6$ that passes through the point $(1, 2)$

$$2 = -\frac{1}{3}(1) + b \quad y = b \quad \boxed{y = -\frac{1}{3}x + 4}$$

- Determine the point of intersection between the following linear functions.

$$y = 2x + 2 \text{ AND } y = -3x + 17 \quad 2(3) + 2 = 8$$

$$2x + 2 = -3x + 17$$

$$5x = 15$$

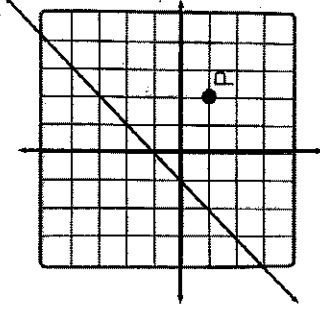
$$x = 3 \quad \boxed{(3, 8)}$$

* Plug in pt w/ opp. reciprocals

* K&T = to each other

August 07, 2019

CHALLENGE: Given P (2,-1), determine P' after a reflection over the line $y = x + 1$



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$$1. 1 = -1(2) + b$$

$$1 = b$$

$$y = -x + 1$$

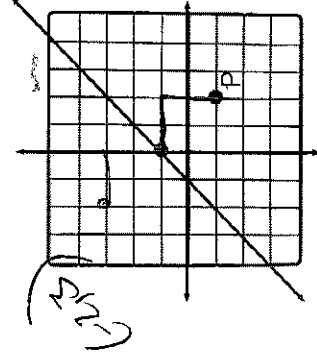
$$2. x + 1 = -x + 1$$

$$x = 0$$

$$3. 0 + 1 = 1$$

Intersection pt: (0, 1)

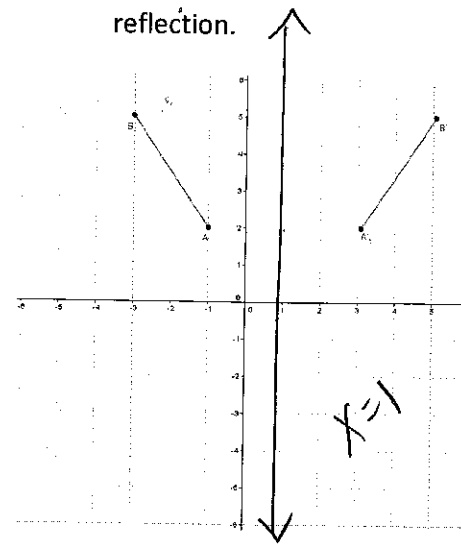
- Determine reflection by counting slope OR using distance formula.



explanation

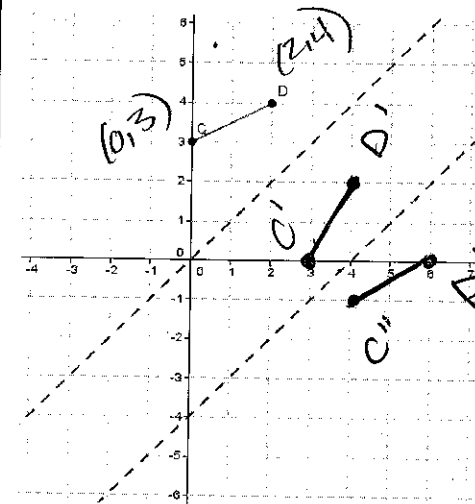
Multiple Reflections

A. Draw and name the line of reflection.



Write the equation of the line of reflection.

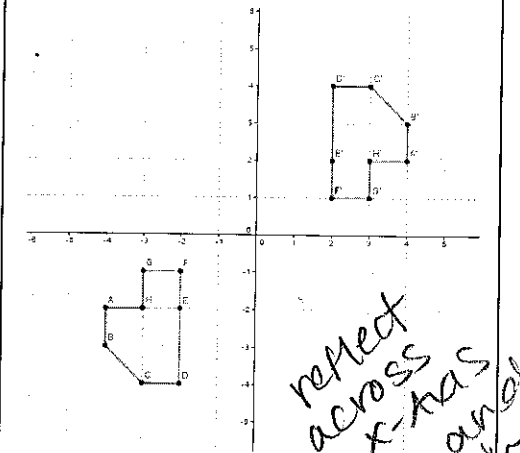
C. Reflect \overline{CD} over the line $y = x$. Name its image $\overline{C'D'}$.



Now reflect $\overline{C'D'}$ over the line $y = x - 4$. Name that image $\overline{C''D''}$. What other transformation would give you the same image.

$\overline{CD} \rightarrow \overline{C''D''}$
translation

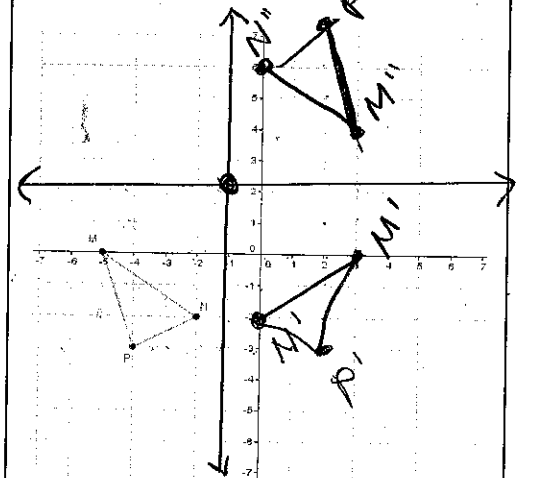
B. The transformation in the graph is a rotation of 180 degrees



What two REFLECTIONS (done back to back) would achieve the same image?

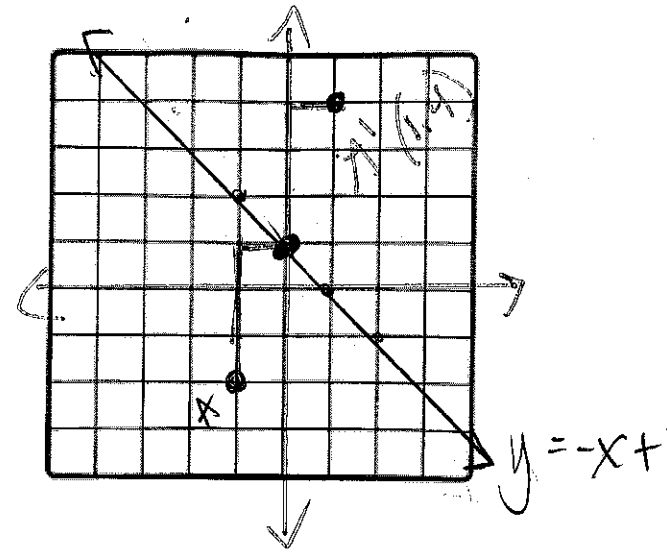
reflect across x-axis and then y-axis

* D. Reflect $\triangle MNP$ over the line $x = -1$. Name its image $\triangle M'N'P'$



Now reflect $\triangle M'N'P'$ over the line $y = 2$. Name that image $\triangle M''N''P''$. What transformation did you create?

E. Given A (-1, -2) determine A' after a reflection over the line $y = -x + 1$. Use the graph below if needed.



$$-2 = 1(-1) + b$$

$$-1 = b$$

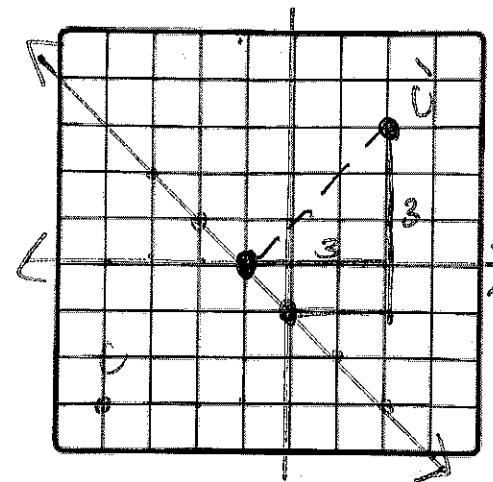
$$y = x - 1$$

$$x - 1 = -x + 1$$

$$2x = 0$$

$$x = 0$$

F. Given C'(2, 3) after a reflection over the line $y = -x - 1$, determine C. Use the graph below if needed.



$$3 = 1(2) + b$$

$$1 = b$$

$$y = x + 1$$

$$x + 1 = -x - 1$$

$$2x = -2$$

$$x = -1$$

$$C(-4, -3)$$

$(-1, 0) \rightarrow$ pt of intersection