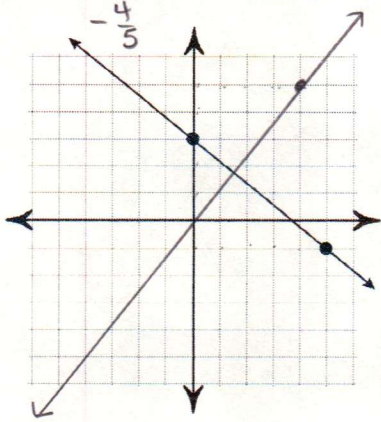


Notes 7.4 – Geometric Transformations

Warmup

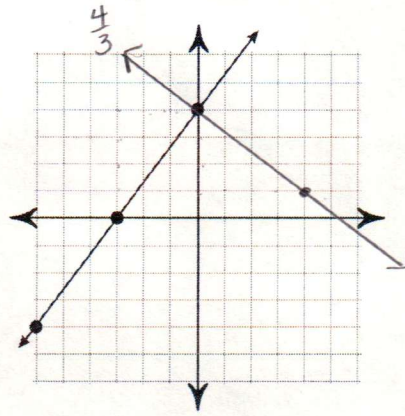
a. Draw a line that is perpendicular to the given line.



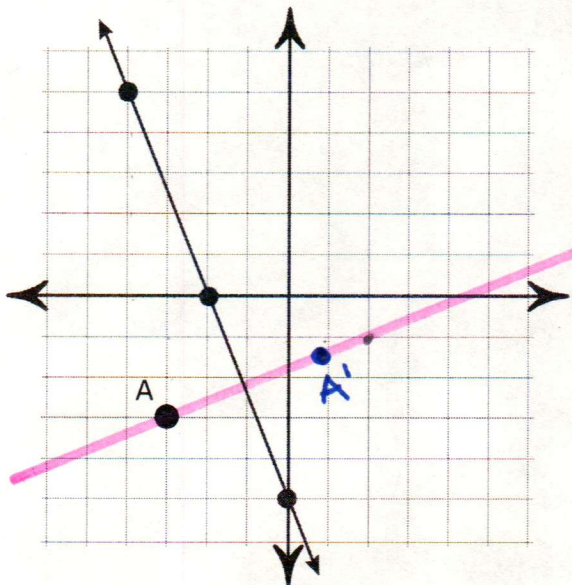
b. Find the slope that is perpendicular to the given slope

$m = -3$

$\perp m = \frac{1}{3}$



Lesson – Reflecting over any linear line of reflection



Find the slope of the given line:

$-\frac{5}{2}$

Give the slope of a line that is perpendicular to the given line:

$\perp m = \frac{2}{5}$

Draw a line that is perpendicular to the given line that goes through point A.

Measure the distance (using a ruler or compass) from A to the line of reflection (using the perpendicular line) and then measure an equal distance on the other side of the line and draw point A'.

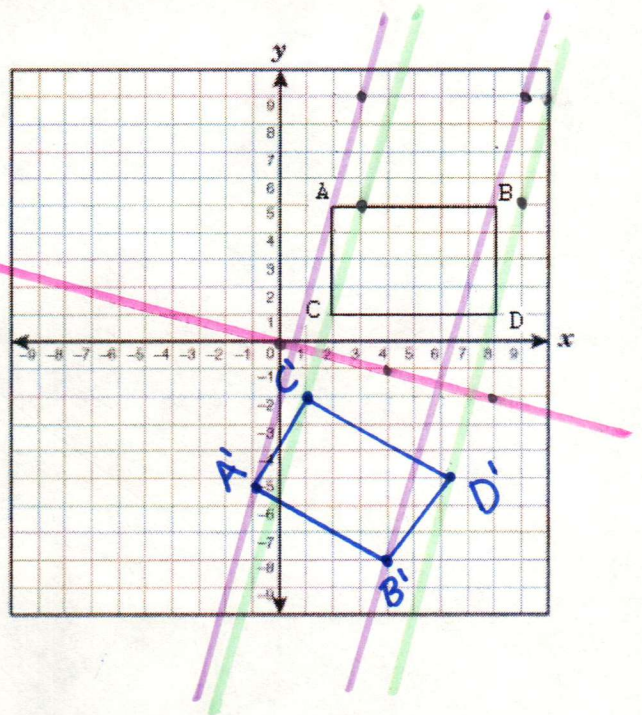
Did you check that your line was perpendicular?

How could you verify that you accurately reflected the point A?

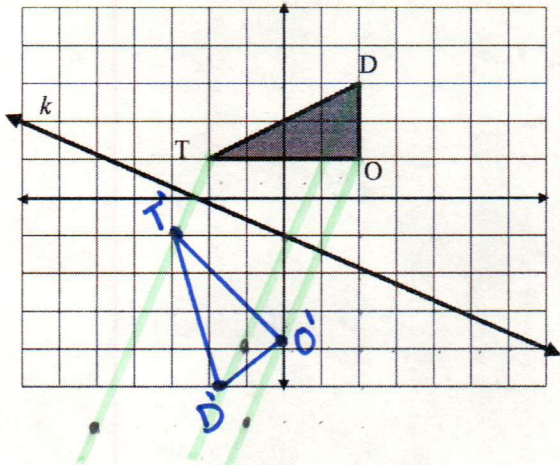
Fold on the line of reflection and A and A' should be touching

Reflect  $ABCD$  over the line  $y = -\frac{1}{4}x$

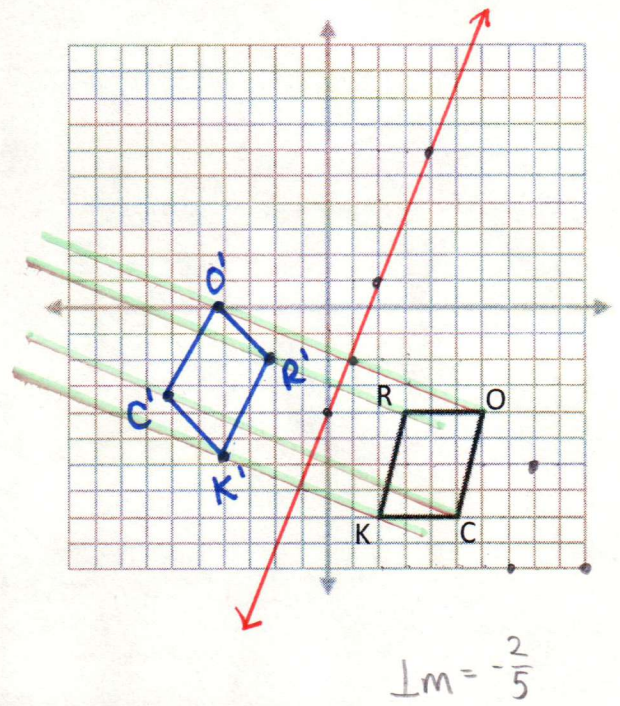
- graph the line
- find the slope that is perpendicular  
 $\perp m = 4$
- draw lines through each of the corners using the perpendicular slope you found
- measure the distance to the line of reflection to use to reflect the corners
- draw and label the shape



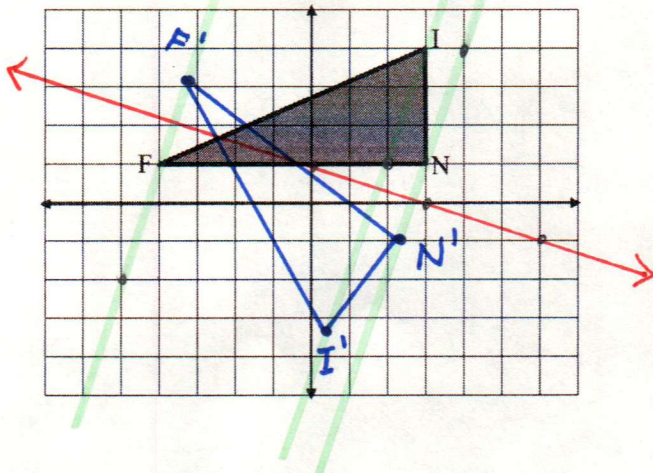
Reflect DOT over the given line of reflection



Reflect ROCK over the line  $y = \frac{5}{2}x - 4$



Reflect FIN over the line  $y = -\frac{1}{3}x + 1$



Using image 1 as the pre-image, determine which transformations occurred to place the other images. If it has been rotated determine how much and which way.



<p>Image 2</p> <p>translation</p>	<p>Image 3</p> <p>rotation (90° ↻)</p> <p>translation</p>
<p>Image 4</p> <p>rotation (90° ↺)</p> <p>translation</p>	<p>Image 5</p> <p>reflection</p> <p>translation</p>