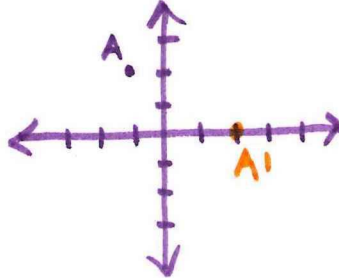
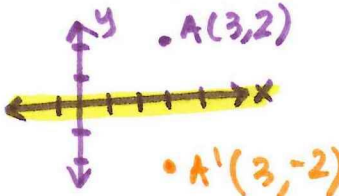
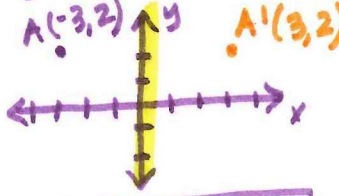
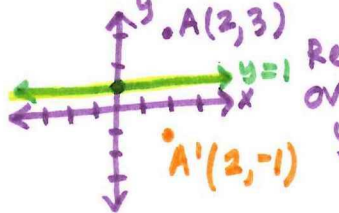
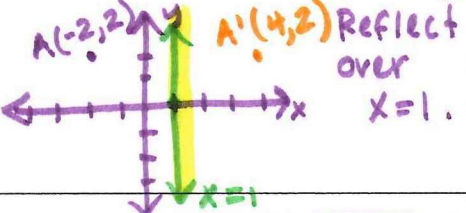

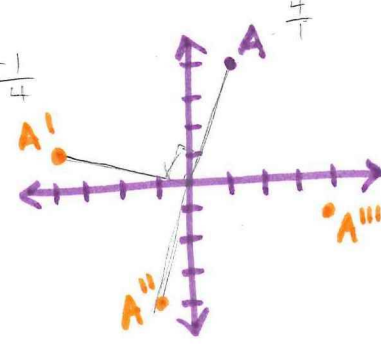


Perform Congruence Transformations

Vocabulary	Definition	Example
TRANSFORMATION	A transformation is an operation that moves or changes a geometric figure in some way to produce a new figure.	<p>Translation Reflection Rotation Dilation - Ch. 6</p> <p style="font-size: 2em; color: orange;">}</p> <p style="font-size: 2em; color: orange;">4.8</p>
IMAGE	The <u>new figure</u> is produced by a transformation is the image.	<p>Pre-image (original) $\triangle ABC$</p> <p>Image (new) $\triangle A'B'C'$ $\triangle A''B''C''$</p> <p style="color: orange;">↻ Prime notation</p>
TRANSLATION	<p>(x, y)</p> <p>A translation <u>moves every point</u> of a figure the <u>same distance</u> in the <u>same direction</u>.</p> <p>x-values y-values left/right up/down</p> <p style="color: orange;">- + + -</p>	<p>coordinate notation: $(x, y) \rightarrow (x + a, y + b)$</p> <p>Translate point A 3 to the right and down 2.</p> <p>$(x, y) \rightarrow (x + 3, y - 2)$</p>  <p>$A(-1, 2)$ $(-1, 2) \rightarrow (-1 + 3, 2 - 2)$ $A'(2, 0)$</p>

<p>REFLECTION</p>	<p>A reflection uses a <u>line of reflection</u> to create a mirror image of the original figure.</p>	<p>x-axis ($y=0$)  $(x,y) \rightarrow (x,-y)$ up/down</p> <p>y-axis ($x=0$)  $(x,y) \rightarrow (-x,y)$</p> <p>Horizontal Line ($y=\#$)  Reflect over $y=1$.</p> <p>Vertical Line ($x=\#$)  Reflect over $x=1$.</p>
<p>ROTATION</p>	<p>A rotation turns a figure about a fixed point, called a <u>center of rotation</u>. $(0,0)$ = origin <u>counterclockwise</u>  unless told to go clockwise</p>	 <p>$A(1,4)$ $90^\circ \rightarrow A'(-4,1)$ $180^\circ \rightarrow A''(-1,-4)$ $270^\circ \rightarrow A'''(4,-1)$</p> <p>$90^\circ = 1$ turn $180^\circ = 2$ turns $270^\circ = 3$ turns</p> <div style="border: 1px solid purple; padding: 5px; width: fit-content;"> <p>(x,y) $90^\circ \rightarrow (-y,x)$ $180^\circ \rightarrow (-x,-y)$ $270^\circ \rightarrow (y,-x)$</p> </div> <p>* I would turn your paper :)</p>
<p>CONGRUENCE TRANSFORMATION</p>	<p>A congruence transformation <u>changes</u> the <u>position</u> of a figure <u>without</u> <u>changing</u> its <u>size</u> or <u>shape</u>.</p> <p>isometry</p>	<p>Translation Reflection Rotation</p>