

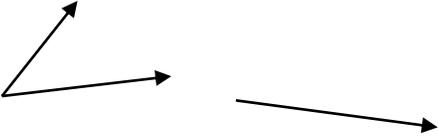
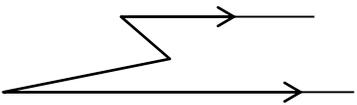
## GEOMETRY

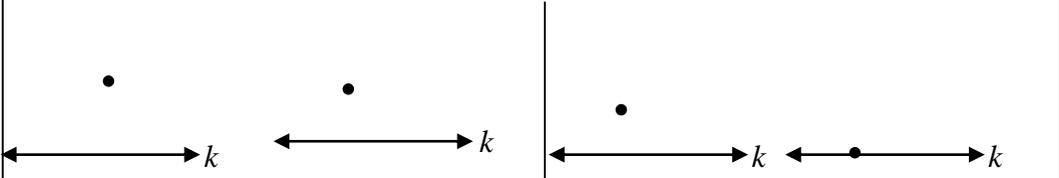
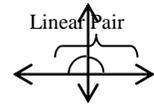
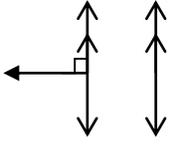
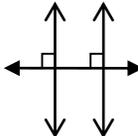
### UNIT 3: PARALLEL AND PERPENDICULAR LINES

\*\*SHOW ALL WORK\*\*

A COMPASS AND GRAPH PAPER IS NECESSARY FOR THIS UNIT

LESSON	TOPIC	BOOK/ VIDEO	COMMON CORE LS	ASSIGNMENT
DAY 1	LINES AND ANGLES (3-1) PARALLEL LINES AND ANGLES (3-2)  System of Equations (flipped)	3-1 3-2	G-CO.4 G-CO.9 A-REL.5	<ul style="list-style-type: none"> <li>P. 149-151; #22-26, 30 – 32, 46 &amp; 47 (DRAW IT!)</li> <li>READ P.152-3: DO # 1 &amp; #3</li> <li>P 158-159 #7-11 odd, 12 (needs system), 27, 28</li> </ul>
DAY 2	AUXILIARY LINES		G-CO.9	WORKSHEET 3-2
DAY 3	PROVING LINES PARALLEL & CONSTRUCTING PARALLEL LINES (3-3)	3-3	G.CO.9	<ul style="list-style-type: none"> <li>P. 167; #22 - 35</li> <li>FINISH PRACTICE CONSTRUCTIONS IN NOTES PACKET</li> </ul>
DAY 4	PERPENDICULAR LINES (3-4) & CONSTRUCTING PERPENDICULAR LINES	3-4	G-CO.1 G-CO.9 G-CO.12	<ul style="list-style-type: none"> <li>P 175; #8, 9, 13,15, 16-21</li> <li>P. 178; #35</li> <li>FINISH PRACTICE CONSTRUCTIONS IN NOTES PACKET</li> <li><b>Prepare for Quiz Next Class</b></li> </ul>
DAY 5	<b>QUIZ (DAY1 –DAY4)</b> EXTENDING PARALLEL & PERPENDICULAR CONSTRUCTIONS TO RIGID MOTIONS AND TRIANGLES		G.CO.9	WORKSHEET 3-5
DAY 6	EQUATIONS & SLOPES OF LINES IN THE COORDINATE PLANE (3-5 & 3-6) GRAPHING LINES <ul style="list-style-type: none"> <li>SLOPE- INTERCEPT /FORM</li> <li>POINT-SLOPE FORM</li> </ul>	3-5 3-6	G-CO.1 G-GPE.5	P.186-187; #25 P. 194 #13-18,25,27-31 *NEED GRAPH PAPER*
DAY 7	SYSTEMS OF LINE EQUATIONS IN THE COORDINATE PLANE <ul style="list-style-type: none"> <li>PARALLEL/COINCIDENT</li> <li>INTERSECTING/PERPENDICULAR</li> <li>PERPENDICULAR BISECTORS</li> </ul>	3-5 3-6	G-CO.1 G-GPE.5	P.186-187; #15-17,26 P. 194 #19-22,41,47-51,52A *NEED GRAPH PAPER*
DAY 8	TRANSFORMATIONS OF LINES		G-CO.2 G-GPE.5	COMPLETE WORKSHEET 3-7
DAY 9	<b>REVIEW</b>			<b>FINISH REVIEW PACKET</b>
DAY 10	<b>TEST</b>			<ul style="list-style-type: none"> <li><b>CUMULATIVE REVIEW #3 DUE _____</b></li> <li><b>COMPLETE BRIDGE TO UNIT 4 DUE NEXT CLASS</b></li> </ul>

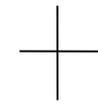
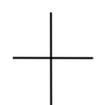
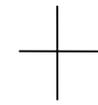
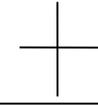
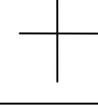
DAY	MAIN POINTS / FORMULAS TO REMEMBER	QUESTIONS AFTER HMWK										
<p><b>3-1</b></p>	<p>Example drawings of Parallel Lines Perpendicular Lines Skew Lines Parallel Planes Perpendicular Planes</p> <p>A transversal is a segment/line that _____</p> <p>When identifying angle pairs created by a transversal intersecting two lines, be sure to stay on the _____.</p> <p>Theorem: A line perpendicular to 2 intersecting lines in a plane at their point of intersection is _____ to the plane. Draw it:</p> <p>Given that the lines are _____, angle pairs made by a transversal are then either _____ or _____. That is, if <math>\parallel</math> lines <math>\rightarrow</math> identified <math>\sphericalangle</math> pair type is <math>\cong</math> or supplementary.</p> <table border="0"> <thead> <tr> <th>Angle Pair Type</th> <th>Relationship if Parallel Lines</th> </tr> </thead> <tbody> <tr> <td>1. _____</td> <td>_____</td> </tr> <tr> <td>2. _____</td> <td>_____</td> </tr> <tr> <td>3. _____</td> <td>_____</td> </tr> <tr> <td>4. _____</td> <td>_____</td> </tr> </tbody> </table> <p>Hint: when given an angle measure in a transversal application, 1) _____ 2) _____</p> <p>Reminder: construct a congruent angle (copy an angle)</p>  <p>Note: construct parallel lines through copy an angle is recorded in 3-4</p>	Angle Pair Type	Relationship if Parallel Lines	1. _____	_____	2. _____	_____	3. _____	_____	4. _____	_____	
Angle Pair Type	Relationship if Parallel Lines											
1. _____	_____											
2. _____	_____											
3. _____	_____											
4. _____	_____											
<p><b>3-2</b></p>	<p>An _____ line or segment is one added to a given drawing to help solve for unknown angles. Ex:</p>  <p>Reasons: Through a given point, there can be only _____ line parallel to a given line. Two points determine a _____ or line segment. Then follow the steps for any parallel lines cut by a transversal problem.</p> <p>Tips for solving systems of equations: (see notes + p.152)</p> <ol style="list-style-type: none"> <li>Use the relationships in the drawings to find the actual measures of as many angles as possible.</li> <li>Write _____ equations.</li> <li>Use algebraic techniques _____ or _____ to solve for one variable and then substitute that value to solve for the other variable. Goal: get _____ &amp; _____ values of one variable's coefficients to eliminate it.</li> <li>Check your solution, ex: ( x , y ) since they must work together in both equations.</li> </ol>											

<p><b>3-3</b></p>	<p>Proving parallel lines using angle pairs is a conjunction:          _____ and _____ → Parallel Lines</p> <p>Be careful that your angle pairs are on the same _____.</p>													
<p><b>3-4</b></p>	<p>Theorems:</p> <ol style="list-style-type: none"> <li>1) If two intersecting lines form a linear pair of congruent angles, then the lines are _____.</li> <li>2) A line perpendicular to 1 of 2 _____ lines is _____ to the other line. (Perpendicular Transversal Theorem)</li> <li>3) Two lines _____ to the same line are _____ to each other. (Two Parallel Lines are <math>\perp</math> to the Same Line)</li> </ol> <p>Construct the specific line through the given point:</p> <p>Parallel to <math>k</math>      Parallel to <math>k</math>      Perpendicular to <math>k</math>      Perpendicular to <math>k</math></p>  <p>Basic Skills:</p> <table border="0"> <tr> <td>1. Draw _____</td> <td>1. <math>\perp</math> from point _____</td> <td>1. Draw helper arc on <math>k</math> from _____</td> </tr> <tr> <td>2. _____ corresp <math>\sphericalangle</math></td> <td>the given line</td> <td>2. _____ segment created on <math>k</math></td> </tr> <tr> <td>3. Draw _____</td> <td>2. <math>\perp</math> from point _____</td> <td>3. Draw perpendicular _____</td> </tr> <tr> <td></td> <td>the given line</td> <td></td> </tr> </table> <p><i>Reminder: do not use _____ as endpoints of a segment.</i></p>	1. Draw _____	1. $\perp$ from point _____	1. Draw helper arc on $k$ from _____	2. _____ corresp $\sphericalangle$	the given line	2. _____ segment created on $k$	3. Draw _____	2. $\perp$ from point _____	3. Draw perpendicular _____		the given line		<p><b>Draw conclusion in Color:</b></p>   
1. Draw _____	1. $\perp$ from point _____	1. Draw helper arc on $k$ from _____												
2. _____ corresp $\sphericalangle$	the given line	2. _____ segment created on $k$												
3. Draw _____	2. $\perp$ from point _____	3. Draw perpendicular _____												
	the given line													
<p><b>3-5</b></p>	<p>Perpendicular line constructions can be used to construct: (sketch example)</p> <ol style="list-style-type: none"> <li>1. _____ of a triangle</li> <li>2. _____ of a triangle</li> <li>3. Line of _____ between a pre-image and image</li> <li>4. _____ image (rigid motion transformation)</li> </ol>													

**3-6 Slope Formula:**

2 things needed to write the equation of a new line related to a given line:  
 1. \_\_\_\_\_  
 2. \_\_\_\_\_

Equations of Lines:

Slope-Intercept*	Vertical	Horizontal	Point-Slope**
Eq:	Eq:	Eq:	Eq:
m= b=	Slope is c=	Slope is b=	m= (x <sub>1</sub> ,y <sub>1</sub> )=
Sketch + slope 	Sketch: 	Sketch: 	Sketch + slope 
Sketch - slope 			Sketch - slope 

\*Unique \*\*Not Unique

**3-7 Comparing Lines:**

Unequal Slopes	Equal Slopes
<b>Intersecting Lines</b>	<b>Parallel Lines</b>
m <sub>1</sub> & m <sub>2</sub> :	m <sub>1</sub> & m <sub>2</sub> :
b <sub>1</sub> & b <sub>2</sub> :	b <sub>1</sub> & b <sub>2</sub> :
<b>Perpendicular Lines</b>	<b>Coincident Lines</b>
m <sub>1</sub> & m <sub>2</sub> :	m <sub>1</sub> & m <sub>2</sub> :
b <sub>1</sub> & b <sub>2</sub> :	b <sub>1</sub> & b <sub>2</sub> :

**Perpendicular Bisector Line:** use the \_\_\_\_\_ of the segment as the point on the new line and the \_\_\_\_\_ slope of the given segment.

**3-8 To rotate 90° around a point:**

- 1) Draw segment from the \_\_\_\_\_ of rotation through pre-image point
- 2) Count \_\_\_\_\_ \* slope from center of rotation

**To reflect into a line:**

- 1) Determine the \_\_\_\_\_ \* of the line of reflection
- 2) Count the \_\_\_\_\_ \* slope from the pre-image to the line
- 3) Repeat the same opposite reciprocal slope from the line to locate the image

**To reflect into a point or rotate 180° around a point:**

- 1) Draw a ray from the pre-image point through and beyond the point of reflection/center of rotation
- 2) Count the slope from the pre-image and repeat using the \_\_\_\_\_ \* slope to locate the image. *(This is like finding a missing endpoint given an endpoint and the midpoint)*

**\*Keep slope in fraction form and do not \_\_\_\_\_ it.**

	<p>To transform a line:</p> <ol style="list-style-type: none"><li>1) Graph the pre-image line</li><li>2) Find ___ points on the pre-image line &amp; transform them</li><li>3) Graph the image points &amp; calculate the _____</li><li>4) Compare the pre-image and image _____ &amp; y-intercepts if applicable</li><li>5) Write the equation of the image line, if applicable</li></ol> <p>Translation is the only rigid motion that always produces a certain relationship between the pre-image and image lines. Relationship: _____</p>	
<b>Review</b>		