

GEOMETRY LAB

UNIT 7: SIMILARITY

Name: _____
Section: _____

COLORED PENCILS, CALCULATOR, COMPASS, AND GRAPH PAPER NEEDED

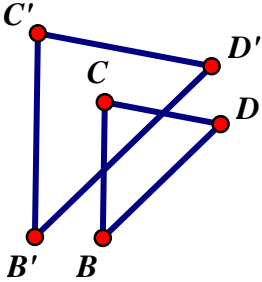
****SHOW ALL WORK****

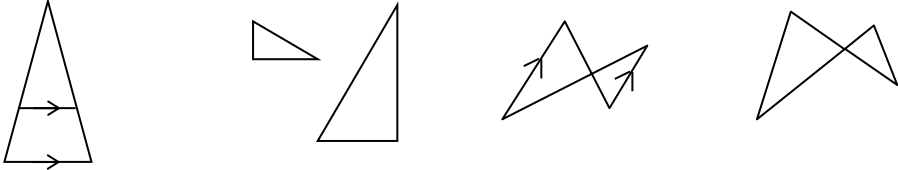
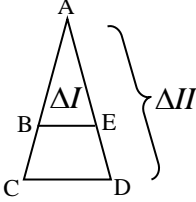
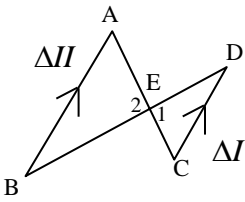
FOR HW PROOFS, YOU MUST:

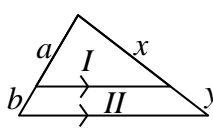
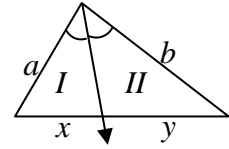
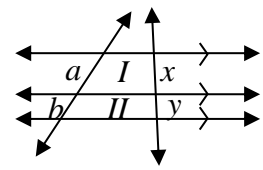
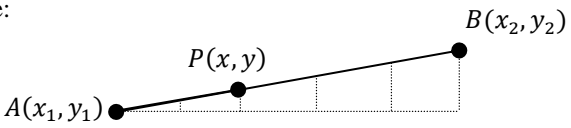

- COPY THE DIAGRAM FROM THE BOOK OR GRAPH THE POLYGON(S)
- WRITE OUT THE **GIVEN** AND **PROVE** STATEMENTS
- WRITE A 2 COLUMN, FLOWCHART, OR PARAGRAPH / COORDINATE PROOF AS APPROPRIATE.

NOTE: THE BRIDGE TO UNIT 7 CONSISTS OF VALUABLE SKILLS NEEDED FOR PROPORTIONS AND WORKING WITH RADICALS NEEDED FOR THIS UNIT AND THE REST OF THE YEAR (SEE BOOK 7-1 FOR ADDITIONAL HELP)

LESSON	TOPIC	BOOK/ VIDEO	COMMON CORE LS	ASSIGNMENT
Day 0	Algebra Review	7-1		PROBLEM SET IN NOTES
Day 1	Dilations, Scale Factors, and Similarity Ratios	7-6	G-SRT.3,5 G-CO.2,12	PROBLEM SET 7-1
Day 2	Definition of Similar Polygons; Triangle Similarity Criteria: SSS~	7-2 7-3	G-CO.5 G-SRT. 1,2,3,4	P.465: #9,10,19,20,23,24 P.475: #3,21,25,37
Day 3	Triangle Similarity Criteria: SAS~ and AA~	7-3		P.475: #11,12,16, 17 (explain why-not formal proof), 20,22,23,24,32,36 Extra Credit: #31
Day 4	Using Similarity Criteria in Proofs and Constructions AA~, SSS~, and SAS~	7-3	G-SRT. 2,3,4 G-CO.2	PROBLEM SET 7-3
Day 5	Dilations & Similarity Criteria in the Coordinate Plane	7-6	G-SRT.3,5 G-CO.2,12	PROBLEM SET 7-4
Day 6	Sequence of Transformations Quiz 1	N/A		PROBLEM SET 7-5
Day 7	Applying Properties of Similar Triangles - Splitters	7-4	G-SRT.5	p.485: #8,9,14,15-20,28,32 Extra Credit: #39
Day 8	Segment Partitions (Directed Line Segments)	N/A	G-SRT.1,4,5 G-CO.12	WORKSHEET: DIRECTED LINE SEGMENTS
Day 9	Using Proportional Relationships	7-5	G-SRT.5	P. 491-493: #12,18,19, 24- 26,27,28,29,36
Day 10	Quiz 2 Line Dilations	N/A	G-SRT.1,4,5 G-CO.12	WORKSHEET: LINE DILATIONS
Day 11	Review Day 1			FINISH LET GO MY EGGO
Day 12	Review Day 2			FINISH REVIEW PACKET UNIT 7
T	TEST			<ul style="list-style-type: none"> • BRIDGE TO UNIT 8 • CUMULATIVE REVIEW #7

DAY & DATE	MAIN POINTS / FORMULAS TO REMEMBER	QUESTIONS AFTER HMWK
<p>7-0 Ratio & Proportion; Radicals</p>	<p>Give an example of extended ratio _____ Give an example of a proportion:</p> <ul style="list-style-type: none"> • To check if a proportion is equivalent, you need to check the _____. • To simplify a radical, first rewrite as a _____ of a perfect square factor and another factor. For division, try _____ the fraction under the radical first. • To solve a quadratic equation $ax^2 + bx = c$, first _____. Then factor accordingly (gcf if $a \neq 1$, grouping, CTS) or use the _____ formula. 	
<p>7-1 Similarity Ratio & Scale Factor</p>	<p>$\left[\frac{Pre-Image}{Image} \right] =$ _____</p> <p>$\left[\frac{Image}{Pre-Image} \right] =$ _____, k Always measure from the _____ of dilation!</p> <ul style="list-style-type: none"> • A transformation called a _____ produces a similar figure (non-rigid motion). If $k < 1 \rightarrow$ _____; If $k > 1 \rightarrow$ _____ • Dilations preserve _____, _____, _____, _____, _____, _____ but not _____ (therefore they are not isometric). • The only invariant point would be a vertex/point that is also the _____. • The center of dilation can be _____, _____, or _____ the pre-image. • Show an example of finding the center of dilation A and the scale factor: 	

<p>7-2 & 7-3 SSS~ SAS~ AA~</p>	<p>Definition: two polygons are similar if and only if their corresponding angles are _____ and their corresponding sides are _____</p> <p>$\left[\frac{\text{Side}_1}{\text{Side}_2} = \frac{\text{Side}_1}{\text{Side}_2} \right]$ with the same similarity ratio $\left[\frac{\text{Side}_1}{\text{Side}_2} = \frac{a}{b} \right]$ or equal cross products.</p> <ul style="list-style-type: none"> For each triangle pair, mark a possible triangle similarity criteria for AA~  <ul style="list-style-type: none"> Given the similarity statement $\Delta I \sim \Delta II$, write the proportion for each set of corresponding sides using the specific criteria: <p>SSS~  SAS~ </p> <p>$\frac{\Delta I}{\Delta II} : \text{---} = \text{---} = \text{---}$ $\frac{\Delta I}{\Delta II} : \text{---} = \text{---}$ w/vertical angles $\sphericalangle 1 \cong \sphericalangle 2$</p>	<p>7-2</p> <hr/> <p>7-3</p>
<p>7-4 Similarity Proofs & Constructions</p>	<ul style="list-style-type: none"> Look first for the criteria _____. Once two triangles are proven to be similar, use ~ Δ's → _____ corresponding angles ~ Δ's → _____ corresponding sides (then use _____ property if want side • side = side • side) To construct a similar triangle, either _____ the pre-image from the center of dilation or use a similarity _____. 	
<p>7-5 Similarity in the Coordinate Plane</p>	<ul style="list-style-type: none"> The rule of $(x,y) \rightarrow (kx,ky)$ can only be used if the center of dilation is the _____. Be sure to calculate the similarity ratio or scale factor, which involves _____ radicals. Use the _____ formula. Remember that _____ can also be used to get parallel lines → congruent corresponding or alternate interior angles for AA~. 	
<p>7-6 Sequence of Transformations</p>	<ul style="list-style-type: none"> Both the _____ and the _____ must be included when describing a dilation. First _____ the image polygon onto a common vertex of the pre-image to help find the scale factor. Then rotate and/or reflect. 	

<p>7-7 Splitters</p>	<p>Δ Side Splitter</p>  <p>$\frac{I}{II} : - = -$</p>	<p>Δ Angle Bisector Splitter</p>  <p>$\frac{I}{II} : - = -$</p>	<p>Transversal Splitter</p>  <p>$\frac{I}{II} : - = -$</p>	
<p>7-8 Directed Line Segments</p>	<p>$P(x,y) = \left(\begin{array}{c} \\ \\ \end{array} \right)$</p> <p>Fill in the drawing for the example: P is $\frac{2}{5}$ of the way from A to B or P divides segment \overline{AB} into ratio 2:3</p>  <p>To find it graphically, be sure to draw a _____ triangle where the legs are horizontal and vertical. Then find the fraction of the change in _____ to draw the vertical segment from there.</p>			
<p>7-9 Proportional Relationships</p>	<p>$\frac{Perimeter_1}{Perimeter_2} = \underline{\hspace{2cm}}$ and $\frac{Area_1}{Area_2} = \underline{\hspace{2cm}}$</p> <p>Be sure to analyze the _____ given for dimensions and write appropriate proportions.</p>			
<p>7-10 Line Dilations</p>	<p>Steps for a line dilation:</p> <ol style="list-style-type: none"> _____ the given line to get two pre-image points _____ the two pre-image points _____ the image line Compare the _____ of the pre-image and image lines to determine if the lines are coincident or parallel. <p>Sketch a dilation of \overline{AB} dilated by a scale factor of $k > 1$ centered at O</p>  <p>Notes:</p> <ul style="list-style-type: none"> Slopes between the pre-image and image are _____. Images of dilated lines passing through the _____ are coincident; all other lines will be _____. 			
<p>7-11 Review 1</p>				
<p>7-12 Review 2</p>				

