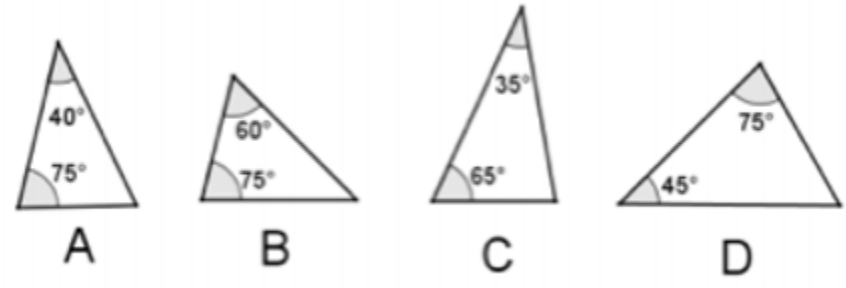
Name: _____ Date: _____

UNIT 5 **LESSON 9**

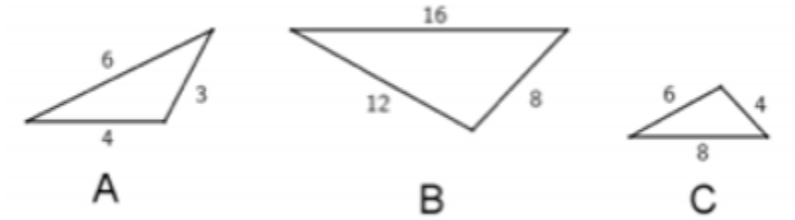
AIM: WHAT ARE THE TRIANGLE SIMILARITY THEOREMS (AA, SAS, SSS)?

Do Now: For each of the following, circle which pairs of triangles are similar. Justify your answer.

1.



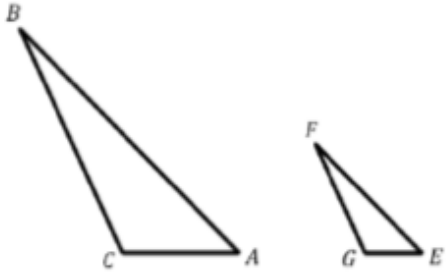
2.



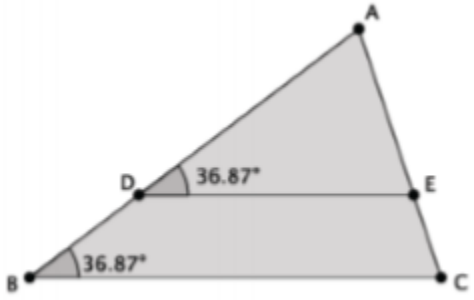
SIMILARITY THEOREMS

THEOREM #1:

_____ _____ Similarity Theorem- two triangles are similar if two angles of one triangle are congruent to two corresponding angles of the other triangle.



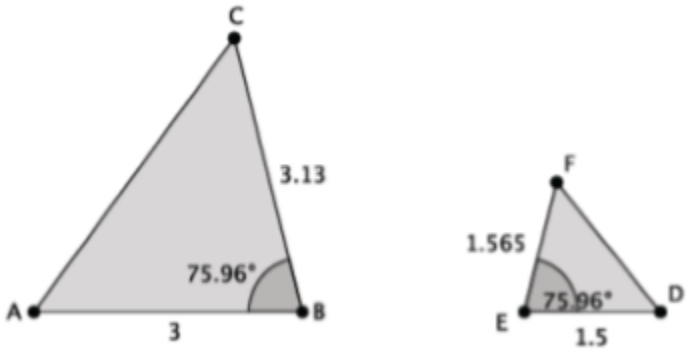
EXAMPLE: Are the triangles below similar? Explain why or why not. Then, write the similarity statement.



THEOREM #2:

_____ Similarity Theorem- two triangles are similar if an angle of one triangle is congruent to the corresponding angle of another triangle and the lengths of the sides including these angles are in proportion, the triangles are similar.

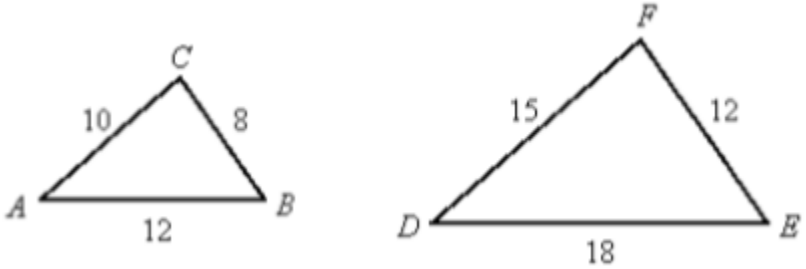
EXAMPLE: Are the triangles below similar? Explain why or why not. Then, write the similarity statement.



THEOREM #3:

_____ _____ Similarity Theorem- two triangles are similar if the lengths of the corresponding sides of two triangles are proportional, then the triangles must be similar.

EXAMPLE: Are the triangles below similar? Explain why or why not. Then, write the similarity statement.



PRACTICE:

1.
In triangles ABC and DEF, $AB = 4$, $AC = 5$, $DE = 8$, $DF = 10$, and $\angle A \cong \angle D$. Which method could be used to prove $\Delta ABC \sim \Delta DEF$?

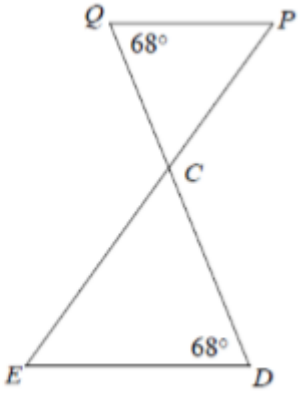
1) AA
2) SAS
3) SSS
4) ASA

2.
In ΔABC and ΔDEF, $\frac{AC}{DF} = \frac{CB}{FE}$. Which additional information would prove $\Delta ABC \sim \Delta DEF$?

1) $AC = DF$
2) $CB = FE$
3) $\angle ACB \cong \angle DFE$
4) $\angle BAC \cong \angle EDF$

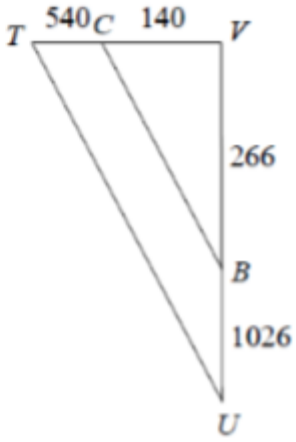
3.
State if the triangles in each pair are similar. If so, state how you know they are similar.

A) not similar
B) similar; AA similarity
C) similar; SAS similarity
D) similar; SSS similarity



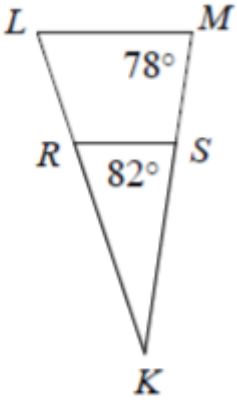
4.
State if the triangles in each pair are similar. If so, state how you know they are similar.

A) not similar
B) similar; AA similarity
C) similar; SAS similarity
D) similar; SSS similarity



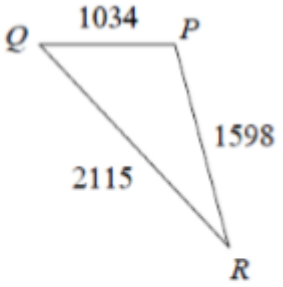
5.
State if the triangles in each pair are similar. If so, state how you know they are similar

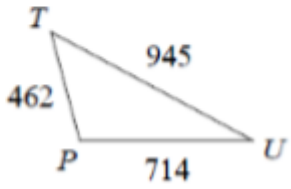
A) not similar
B) similar; AA similarity
C) similar; SAS similarity
D) similar; SSS similarity



6.
State if the triangles in each pair are similar. If so, state how you know they are similar

A) not similar
B) similar; AA similarity
C) similar; SAS similarity
D) similar; SSS similarity



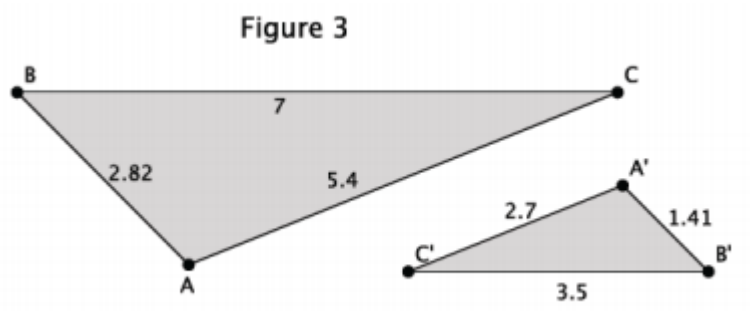


Name: _____ Date: _____

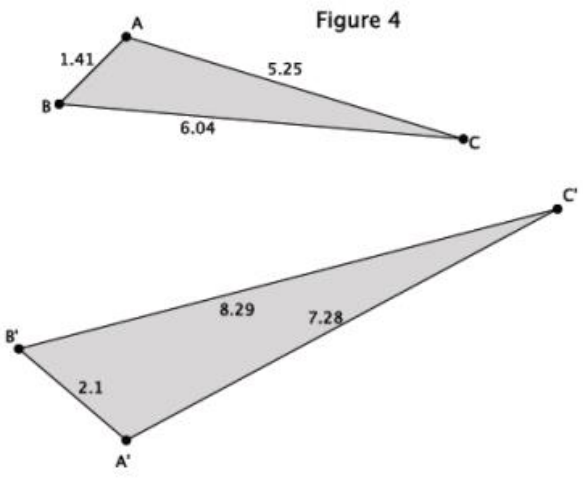
UNIT 5 **LESSON 9**

HOMEWORK

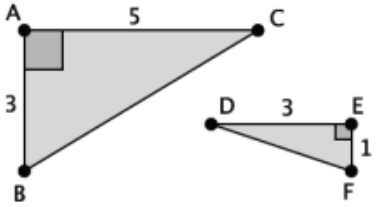
1. Examine the figure and answer the questions to determine whether or not the triangles shown are similar. What can you conclude about the relationship between $\triangle ABC$ and $\triangle AB'C'$. Explain your reasoning.



2. Examine the figure and answer the questions to determine whether or not the triangles shown are similar. What can you conclude about the relationship between $\triangle ABC$ and $\triangle AB'C'$. Explain your reasoning



3. Are the triangles shown below similar? Explain. If the triangles are similar. write the similaritv statement.



4. Are the triangles shown below similar? Explain. If the triangles are similar, write the similarity statement.