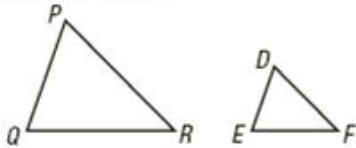


Day 1: Similarity Statements and Using Similarity

1. If polygons are similar then what do you know about the corresponding sides and the corresponding angles?

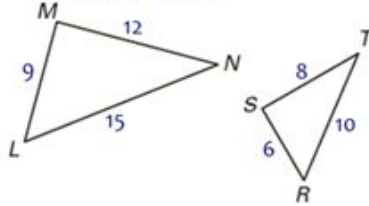
Given the similar figures, name all pairs of corresponding sides and angles. Look at the similarity statement to help.

2. $\triangle PQR \sim \triangle DEF$



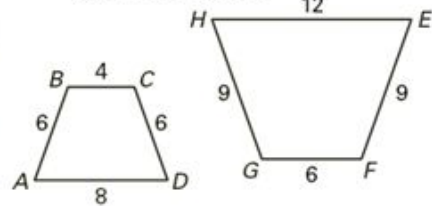
$\overline{QP} \rightarrow$ _____ $\angle Q \cong$ _____
 $\overline{PR} \rightarrow$ _____ $\angle P \cong$ _____
 $\overline{RQ} \rightarrow$ _____ $\angle R \cong$ _____

3. $\triangle LMN \sim \triangle RST$



$\overline{LM} \rightarrow$ _____ $\angle L \cong$ _____
 $\overline{MN} \rightarrow$ _____ $\angle M \cong$ _____
 $\overline{NL} \rightarrow$ _____ $\angle N \cong$ _____

4. $ABCD \sim HGFE$



$\overline{AB} \rightarrow$ _____ $\angle A \cong$ _____
 $\overline{BC} \rightarrow$ _____ $\angle B \cong$ _____
 $\overline{CD} \rightarrow$ _____ $\angle C \cong$ _____
 $\overline{DA} \rightarrow$ _____ $\angle D \cong$ _____

Use the similar polygons above to write the statement of proportionality for each:

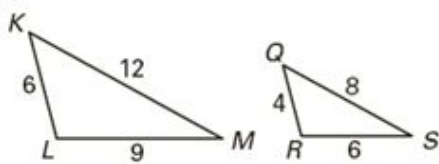
_____ = _____ = _____

_____ = _____ = _____

_____ = _____ = _____ = _____

Complete the similarity statement for the similar figures and then find the scale factor. **REDUCE fractions!**

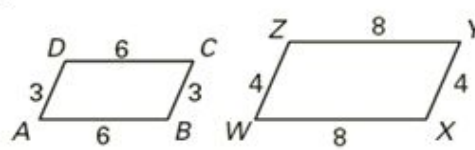
5.



$\triangle LKM \sim \triangle$ _____

Scale Factor:

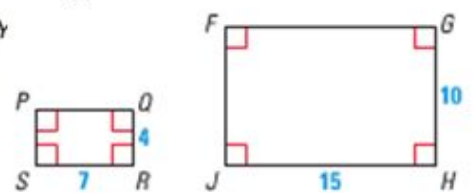
6.



$CBAD \sim$ _____

Scale Factor:

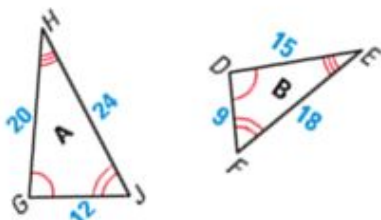
7.



$RSPQ \sim$ _____

Scale Factor:

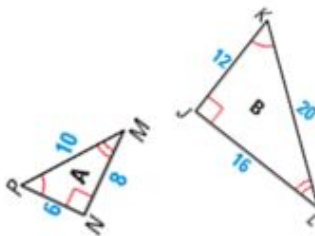
8.



$\triangle HJG \sim \triangle$ _____

Scale Factor:

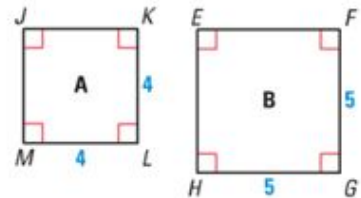
9.



$\triangle NPM \sim \triangle$ _____

Scale Factor:

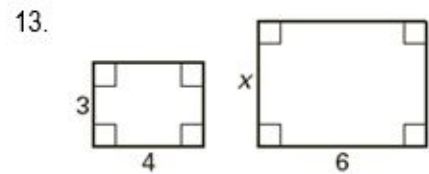
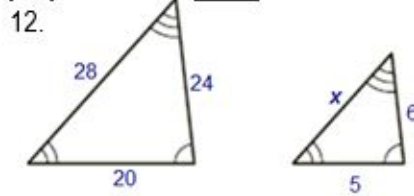
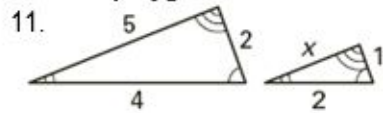
10.



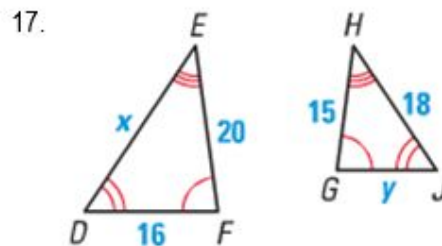
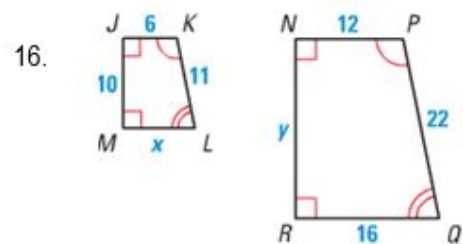
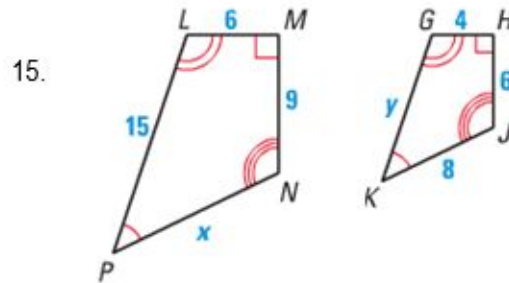
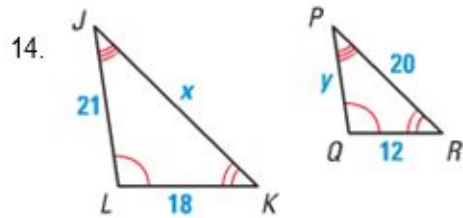
$KJML \sim$ _____

Scale Factor:

The two polygons are similar. Write a proportion and solve for x .



Complete the similarity statement for the similar figures and then find the scale factor. Next, write proportions and SOLVE for the missing lengths.



18. A tree 24 feet tall casts a shadow 12 feet long. Brad is 6 feet tall. How long is Brad's shadow? (draw a diagram and solve)

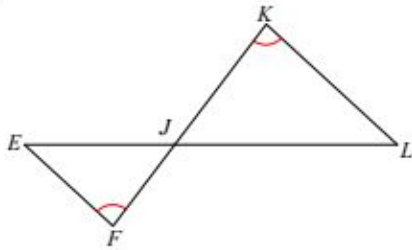
19. Triangles EFG and QRS are similar. The length of the sides of EFG are 144, 128, and 112. The length of the smallest side of QRS is 280, what is the length of the longest side of QRS? (draw a diagram and solve)

20. A 40-foot flagpole casts a 25-foot shadow. Find the shadow cast by a nearby building 200 feet tall. (draw a diagram and solve)

Day 2: Similarity Postulates

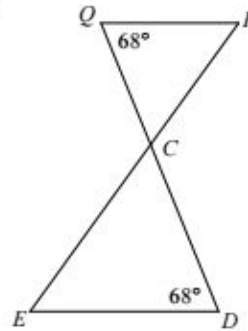
State if the triangles in each pair are similar. If so, state how you know they are similar.

1)



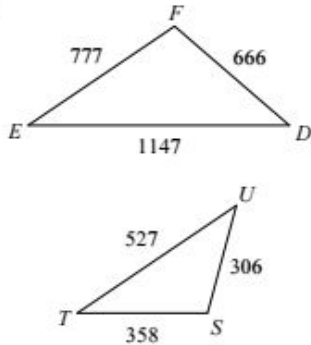
- A) similar; SSS similarity
- B) similar; SAS similarity
- C) similar; AA similarity
- D) not similar

2)



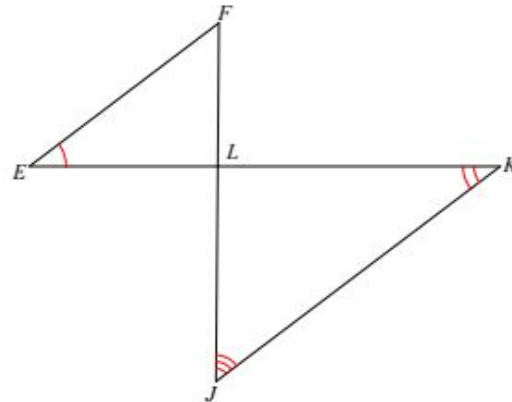
- A) not similar
- B) similar; AA similarity
- C) similar; SAS similarity
- D) similar; SSS similarity

5)



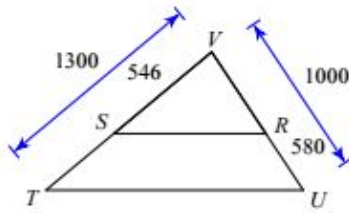
- A) similar; SAS similarity
- B) similar; AA similarity
- C) not similar
- D) similar; SSS similarity

6)



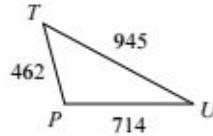
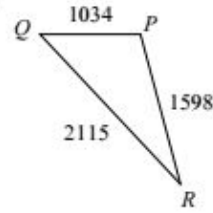
- A) similar; SAS similarity
- B) similar; SSS similarity
- C) not similar
- D) similar; AA similarity

7)



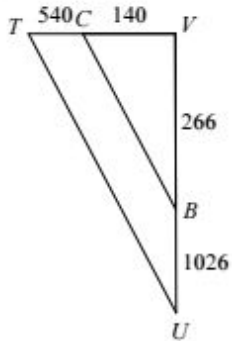
- A) similar; AA similarity
- B) similar; SSS similarity
- C) not similar
- D) similar; SAS similarity

8)



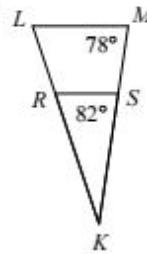
- A) similar; AA similarity
- B) not similar
- C) similar; SSS similarity
- D) similar; SAS similarity

9)



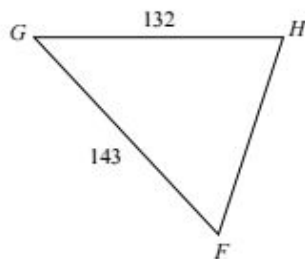
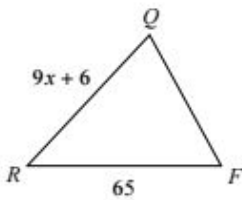
- A) similar; SSS similarity
- B) similar; SAS similarity
- C) similar; AA similarity
- D) not similar

10)



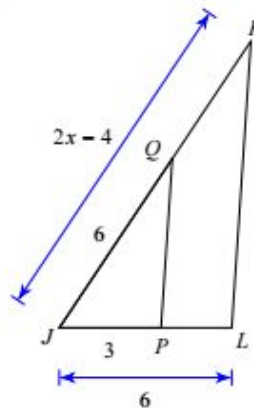
- A) similar; AA similarity
- B) similar; SAS similarity
- C) similar; SSS similarity
- D) not similar

11)



- A) 9
- B) 10
- C) 14
- D) 6

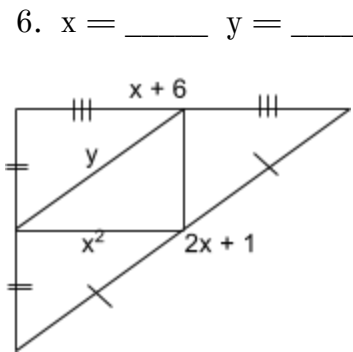
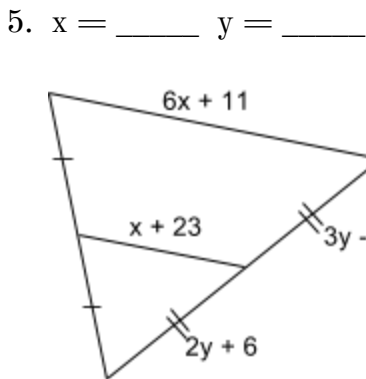
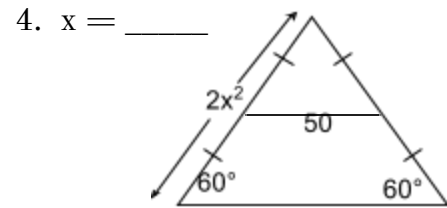
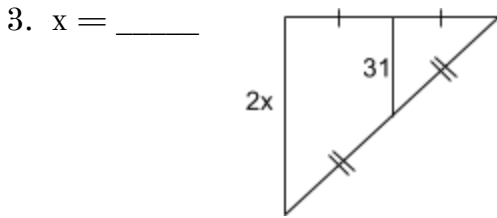
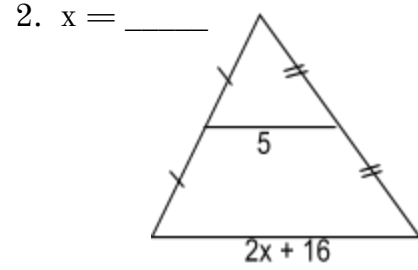
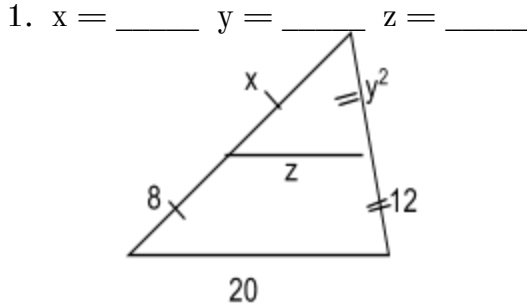
12)



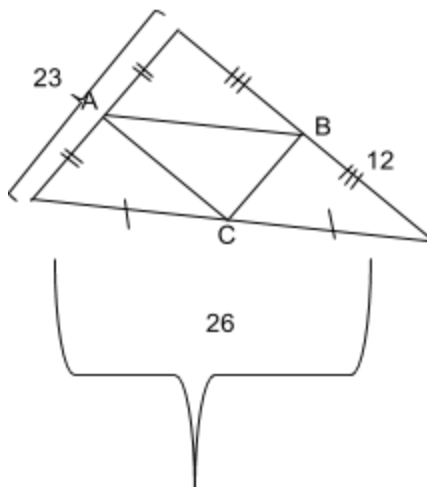
- A) 8
- B) 3
- C) 6
- D) 4

Day 3: Midsegment Theorem

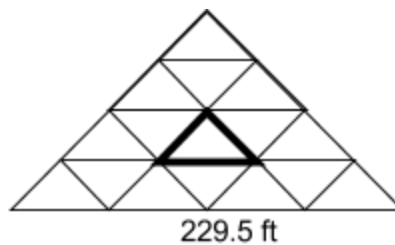
Find the values of the variables. You must show all work to receive full credit. Figures are not drawn to scale.



7. Find the perimeter of $\triangle ABC$.



8. One side of the Rock and Roll Hall of Fame is an isosceles triangle made up of smaller triangles based on mid-segments. The length of the base of the building is 229.5 feet. What would the base of the bold triangle be?



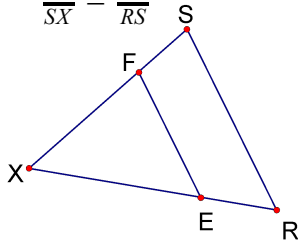
Day 4: Proving Similarity

Complete the following proofs on a separate sheet.

1. Given: $\overline{EF} \parallel \overline{RS}$

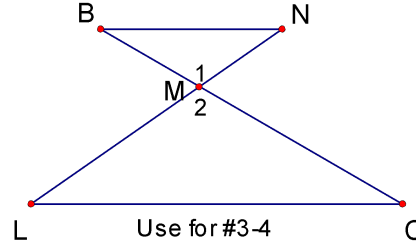
Prove: $\triangle FXE \sim \triangle SXR$

$$\frac{FX}{SX} = \frac{EF}{RS}$$



3. Given: $\angle B \cong \angle C$

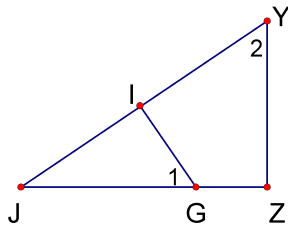
Prove: $\triangle BNM \sim \triangle CLM$



2. Given: $\angle 1 \cong \angle 2$

Prove: $\triangle JIG \sim \triangle JZY$

$$\frac{JG}{JY} = \frac{GI}{YZ}$$



4. Given: $\overline{BN} \parallel \overline{LC}$

Prove: $\frac{BM}{CM} = \frac{NM}{LM}$

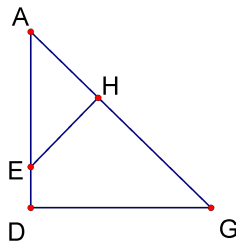
*Use the image above.

Day 5: Proving Similarity

Complete the following proofs on a separate sheet.

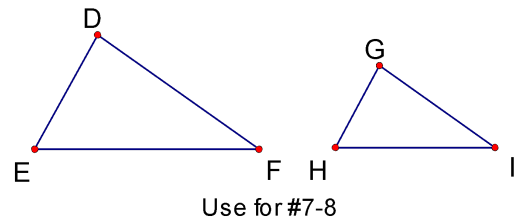
5. Given: $\angle D$ and $\angle AHE$ are right angles

Prove: (1) The two triangles are similar.
(2) $\angle G \cong \angle AEH$



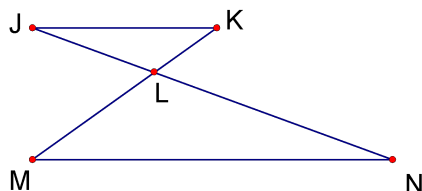
7. Given: $\frac{DE}{GH} = \frac{DF}{GI} = \frac{EF}{HI}$

Prove: $\angle E \cong \angle H$



6. Given: $\frac{JL}{NL} = \frac{KL}{ML}$

Prove: $\angle J \cong \angle N$



8. Given: $\frac{DE}{GH} = \frac{EF}{HI}$
 $\angle E \cong \angle H$

Prove: $\frac{EF}{HI} = \frac{DF}{GI}$

*Use the image above.