Unit: Plane Geometry & Similarity
Student Handout 7

Name _____
Date _____Pd_____

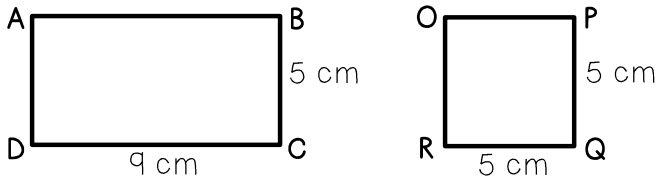
INTRO TO SIMILARITY

CONGRUENT FIGURES

- Figures are congruent if they are the _____ and the _____.
- The angle measures and the side lengths are exactly the same, but they do not have to be _____ the same way.

Determine if each set of figures is congruent or not. Label them and justify your reasoning.

1.



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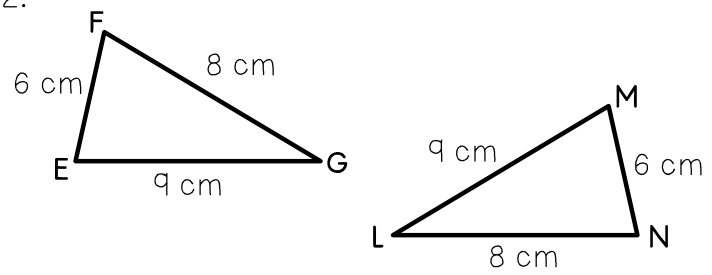
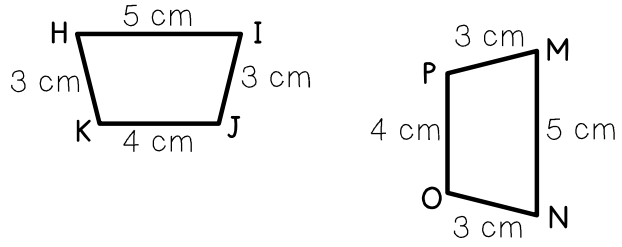


3.



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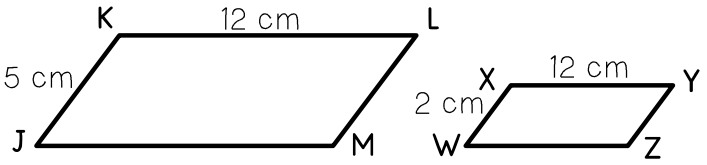
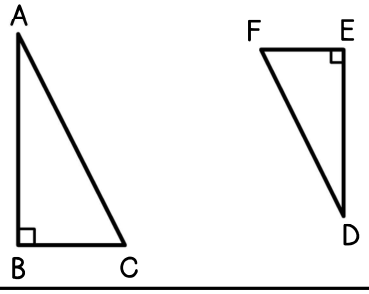


SIMILAR FIGURES

- In order for figures to be similar, they must:
  - be the _____ shape
  - the corresponding angle measures must be _____
  - the corresponding side lengths must be _____

The figures below are similar. Determine the corresponding angles and corresponding side lengths.

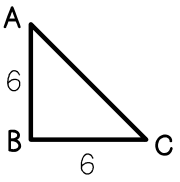
5.



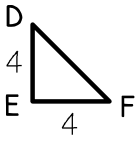
a. ∠A and _____
b. ∠B and _____
c. ∠C and _____
d. side length AB and _____
e. side length BC and _____
f. side length CA and _____

SCALE FACTOR

- Scale factor is the _____ of corresponding sides in a figure:



ORIGINAL



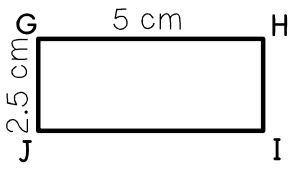
NEW

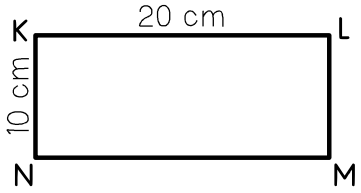
$\frac{\text{new}}{\text{original}} = \frac{4}{6} = \frac{2}{3} \rightarrow$ scale factor $= \frac{2}{3}$

- For figures to be similar, they must have the same ratio or scale factor. The shapes are labeled by corresponding angles, so they will start in the same point and go in the same direction around the shape.

Prove that the figures below are similar by finding the scale factor.

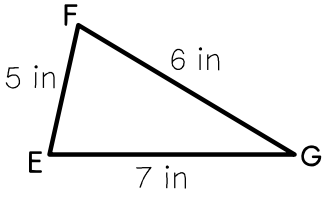
6. Rectangle GHIJ is enlarged to form rectangle KLMN.

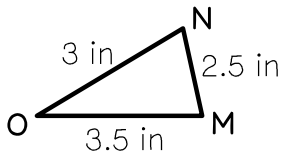




Scale Factor: _____

7. Triangle EFG is reduced to form triangle MNO.





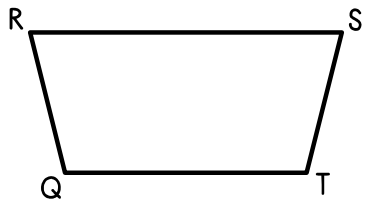
Scale Factor: _____

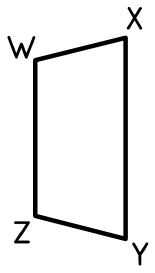
8. Based on questions 6 and 7, what do you notice about the scale factor of an enlargement? What do you notice about the scale factor of a reduction? What do you think a scale factor of 1 would result in?

_____

_____

9. Trapezoid QRST is similar to trapezoid WXYZ. Determine whether each statement is true or false.





_____ a. Angle QRS is congruent to angle ZWX.

_____ b. $\frac{RS}{XY} = \frac{ST}{YZ}$

_____ c. Angle STQ is congruent to angle YZW.

_____ d. $\frac{ST}{YZ} = \frac{WZ}{QT}$

Summarize today's lesson:

Unit: Plane Geometry & Similarity
Homework 7

Name _____

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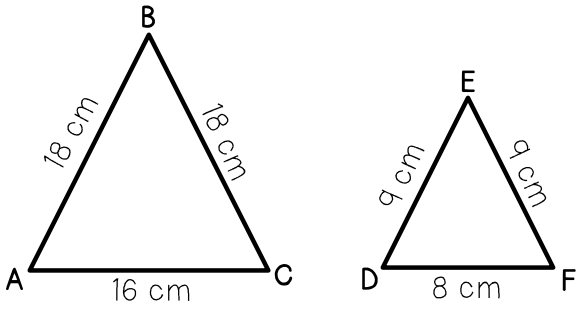
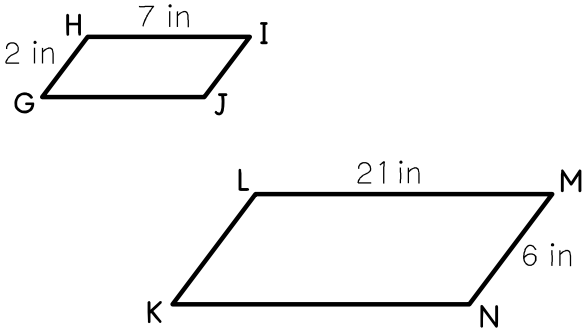
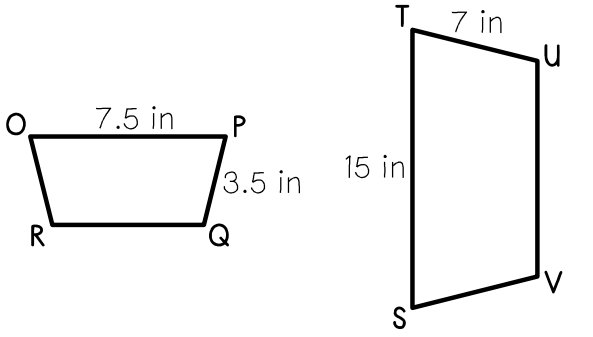
INTRO TO SIMILARITY

In questions 1-3, use your understanding of similar figures to determine the corresponding angles and sides, and the scale factor. The figure on the left is the original.

SIMILAR FIGURES	CORRESPONDING ANGLES AND SIDES	SCALE FACTOR
1. 		
2. 		
3. 		

4. Triangle ABC is similar to triangle DEF. Which proportion must be true?

a. $\frac{AB}{BC} = \frac{FE}{DE}$

b. $\frac{AC}{DF} = \frac{AB}{FE}$

c. $\frac{BC}{EF} = \frac{FD}{CA}$

d. $\frac{AC}{CB} = \frac{DF}{FE}$