**ML #4 Activity: Similar Figures and Scale Drawings (Unit 5 – Math 7)**

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**Mini Lesson #4 Similar Figures and Scale Drawings (Math 7)**

**Vocabulary:**  corresponding sides and angles scale factor

**Part I: Corresponding Sides and Angles**

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**E F**

**H G**

**D C**

**ABCD EFGH**

**CORESPONDING SIDES CORRESPONDING ANGLES**

**9 15 5**

**3**

**12 4**

**CORRESPONDING SIDES CORRESPONDING ANGLES**

**Part II: Similar Figures**

Two figures are similar if…

* + Corresponding angles all have the same measure.
  + The ratios of the lengths of corresponding sides are proportional.

Would the following rectangles be similar? Why or why not?

1) 4 in by 12 in **and** 12 in by 24 in 2) 6 in by 2 in **and** 3 in by 1 in

3) Compare the sides below and prove or disprove if these triangles are similar using the side relationships.

15 cm

5 cm

2 cm

6 cm

8 cm

20 cm

4) Find the missing side length using a proportion.

x in

13 in

21 in

26 in

**Part III: Shadow/Mirror Method Section**

1. Assume a street sign is 8 ft tall and casts a shadow 22 ft long. A nearby tree casts a shadow 58 ft. How tall is the tree? (label the drawing below with the dimensions)

C:\Documents and Settings\lkempf\Local Settings\Temporary Internet Files\Content.IE5\ZYMQHTFB\MC900056715[1].wmf

x

58 ft

8 ft

22 ft

1. Mirror Method: How tall is the building?



6 ft

14 ft

mirror

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5.5 ft

1. A Pine Tree in the park has a shadow that is 20 feet long. When you stand by the tree your shadow in 3 feet. If you are 5 feet tall, about how tall is the Pine Tree?

**Practice Problems for ML #4 (Math 7)**

12 cm

4 cm

6 cm

6 cm

x cm

6 cm

9 cm

9 cm

1. Find the missing side length of the trapezoid.
2. Find the perimeter of the smaller triangle?

4 in

5 in

x in

9 in

12 in

15 in

1. A street sign that is 7 feet tall casts a shadow that is 30 feet long. A nearby tree casts a shadow that is 60 feet long. Find the height of the tree.

4) A scale on a map reads **1 in : 40 miles**

If the distance on a map from Raleigh to Greensboro is 1 ¾ inches, how far will you drive?

5) A scale drawing of a room has a **1 cm : 3 m** scale. If the window is 3 cm from the door in the model, what is the actual distance between the window and the door?