**Classwork: Similarity Challenge – Honors**  Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Triangle ABC is dilated to form triangle DEF. Point O is the center of the dilation. In this diagram $AD=0.5(OA)$



Which equation shows the relationship between the sizes of the two triangles?

1. DE = 2AB
2. EF = 2BC
3. 2EF = 3BC
4. 3AB = 2DF

2. This diagram shows streets on a map. 1st, 2nd, and 3rd streets are parallel.

 What is the length of Main Street between 2nd Street and 3rd Street?

1. 450 feet
2. 550 feet
3. 625 feet
4. 875 feet

3. Larry is proving that the length of the segment joining the midpoints of two sides of a triangle is ½ the length of the third side.

 He shows that 2WT = VT and 2TX = TU by applying the Segment Addition Postulate, substitution, and the definition of multiplication.

 He then shows that ∠VTU *≅* ∠WTX because of the Reflexive Property.

 **Part A**

 Larry next states that ΔVTU *~* ΔWTX. What reason can he give for this statement?

 **Part B**

 Larry then concludes his proof. What is the reason for his last statement?

4. Line *m* ∥ *n* and *o* ∥ *p*, find the values of angles x, y and z. Also find the lengths of a, b and c.

 Explain how you determined each answer.

5. A model train is made at a scale of 1 : 80. The real train’s measurements are shown below. Will the model fit

 into packaging 18 cm long and 8 cm tall?



6. 7.



 8.