7^{th} Grade Assignment – Week #32

Group Assignments: (Do either on Tuesday or Thursday.)

- **Mr York's Bike ride.** (You can use a calculator for these problems!

  From Highway 36 to Jamestown, the road is gradually uphill the whole way. The bike trip has two sections: the turn off to Ward (from Highway 36) comes after 5.2 miles and Jamestown is another 3.3 miles beyond that.

  1) On Monday, Mr. York started at 10:17am, reached the turn off to Ward at 10:42, and then reached Jamestown at 11:00. What was his average speed for the whole uphill trip?
  2) What was his average speed (in miles per hour) for each of the two sections?
  3) When he returned downhill (the whole way from Jamestown to Highway 36), it took him $^{9}/_{20}$ as long as it took him to go uphill. What was his speed and time for the downhill trip?
  4) On Wednesday, he did the same uphill trip, but it took him 12.5% more time than on Monday. His time on Wednesday was what proportion (fraction) of his time on Monday? His speed on Wednesday was what proportion of his speed on Monday?
  5) If his bike tires have a diameter of 26 inches, how many times did his tires rotate during the whole trip on the first day and on the second day?

- **Square Root Algorithm.** Using the latest method we have seen in the lectures, do the following square roots:

  6) $\sqrt{10029889}$
  7) $\sqrt{2046295696}$

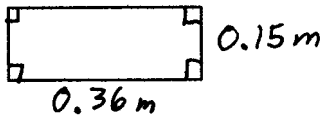
- Do **Geometry – Sheet #6:** problems #3, 5, 17.

Individual Work

- Do **Geometry – Sheet #6**: problems #1, 2, 4.
- Whatever problems you didn't complete in your group (see above), you may wish to complete on your own.

Geometry – Sheet #6

1) Using the rectangle below…



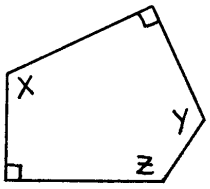
a) What is the perimeter in meters?

b) What is the area in square meters?

c) What is the perimeter in centimeters?

d) What is the area in square centimeters?

2) Given the pentagon below.



a) What is the sum of the measures of the five angles?

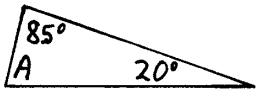
b) If X = 110° and Y = 118°, then what is Z?

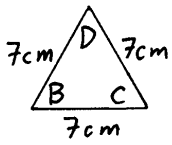
c) If X and Y are congruent, and Z = 130°, then what is X?

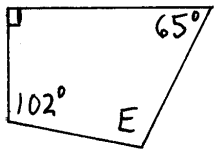
d) Find X, Y and Z if they are all congruent.

3) *Challenge!*
What are the measures of the three angles in a triangle if the middle-sized angle is 4° more than the smallest angle and 28° less than the largest angle?

4) Find the variables.







∠A =

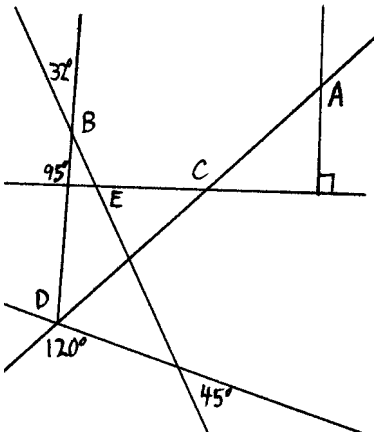
∠B =

∠C =

∠D =

∠E =

5) *Challenge!* Find the variables.



Mental Math

6) Cross multiply.

$$\begin{array}{r} 46 \\ \times\ 46 \end{array}$$

7) $90 \div 25 =$

8) $95^2 =$

9) $0.39 \div 10000 =$

10) $104^2 =$

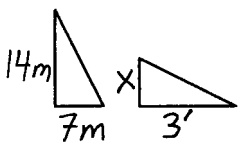
11) $13 \cdot 99 =$

12) $1200 \div 25 =$

13) $12 \cdot 51 =$

Review

14) Find X given that the two triangles are similar.



15) 224 fl.oz. = _____ gal

16) ¾ mi = _____ in

17) **Average Speed.** For each problem, don't calculate a value; simply indicate whether the average speed is *less than*, *equal to*, or *greater than* 10mph.

a) Benny biked from home to the river at 15mph and then biked back at 5mph.

b) Bob biked 5 miles in the first hour, and then 15 miles in the second hour.

18) 120 to 216 is what percentage increase?

19) 216 to 120 is what percentage decrease?

20) Jeff bikes at 18mph. How far is it from his house to school if it takes him 40 minutes to bike that distance?

21) Short Division. Leave the answer as a mixed number.
$872345 \div 7$

22) Division. Leave the answer as an exact decimal (perhaps repeating).
$72.9 \div 0.074$