

Due: 4/4/17 at 5:00PM

Instructions: Your answers to the following questions do not need to be lengthy or written in complete sentences, but should reflect preparation for our discussion about Chapter 9 and Measurement at the beginning of class.

Questions:

1. If you are given the lengths of the three sides of any triangle, how can you determine whether it is an acute, right, or obtuse triangle?

Let c be the length of the longest side of the triangle and a and b be the lengths of the other two sides in either order. Then, if $c^2 < a^2 + b^2$, the triangle is acute, if $c^2 = a^2 + b^2$, the triangle is right, and if $c^2 > a^2 + b^2$, the triangle is obtuse.

2. How can you use an equilateral triangle to find the lengths of the sides in a 30° - 60° - 90° triangle?

In an equilateral triangle, each altitude is also an angle bisector and a median. Draw one such segment to divide the equilateral triangle into two congruent 30° - 60° - 90° triangles. The shorter leg of either 30° - 60° - 90° triangle is half the length of the side of the equilateral triangle, the hypotenuse is equal to the side of the equilateral triangle, and the length of the longer leg is the length of the altitude of the equilateral triangle.

3. The word **mile** comes from the Latin *mille passum*, which means 1000 paces. During the days of the Roman Empire, a Roman pace was the distance covered by two strides. How many strides were in a Roman "mile"? Is this an accurate measurement? Why or why not?

$$1 \text{ mile} \times \frac{1000 \text{ paces}}{1 \text{ mile}} \times \frac{2 \text{ strides}}{1 \text{ pace}} = 2000 \text{ strides}$$

This measurement is not very accurate, because different Romans had very different leg-lengths.

4. Is a measurement of 14 m^2 a measurement of length, area, or volume? How can you tell?

This is a measurement of area, because " m^2 " refers to "meters squared" or "square meters," and squares are two-dimensional objects that have area. If the unit had been " m^3 ," read "meters cubed" or "cubic meters," this would represent a volume, because a cube is a three-dimensional object that has volume.

Muddiest Point:

What questions do you have about the notes you took in Chapter 9, Measurement, or anything from this week?



MML Homework Questions:

Are there any MML homework problems from Chapter 9 that you would like to discuss?