8th Grade Assignment – Week #14

Individual Work

- **Mensuration Practice Sheet #5**: Last week, you did some of the problems on this sheet. Now finish the rest of the problems.

- **Mensuration Practice Sheet #6**: problems #1, 2

Group Assignments:

For Tuesday: **Discovery!**

1) What is the area of a rectangle measuring 2m by 3m?
2) What is the area of a rectangle that has dimensions (length and width) three times as long as the one above?
3) Comparing the two above rectangles, how many times greater is the area of the larger than the smaller?
4) What is the area of a triangle that has sides equal to 14m, 15m, 13m? (Hint: use Heron's formula.)
5) What is the area of a triangle that has dimensions (base and height) twice as long as the one above?
6) Comparing the two above triangles, how many times greater is the area of the larger than the smaller?
7) What is the area of a circle with a diameter of 4m?
8) What is the area of a circle that has dimensions (diameter and circumference) ten times as long as the one above?
9) Comparing the two above circles, how many times greater is the area of the larger than the smaller?
10) **State the law that best summarizes what is demonstrated with the above problems.**

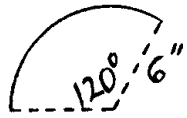
Use the law you found to solve the below two problems.

11) There are two rectangles – the larger one has dimensions five times greater than the smaller. Find the area of the larger rectangle if the smaller one has area of 2.4 m^2.
12) There are two circles – the larger one has dimensions six times the smaller. Find the area of the larger circle if the smaller one has area of 7 m^2.

For Thursday: **Puzzles!**

13) In 1981, Kate's grandfather, who was born on New Year's Day, said, "Once, when I was younger, my age was the square root of the year." How old was he in 1981?

14) *Challenge!* The circle sector shown here (see drawing on the right) can be made into a cone by lifting up the center, bringing the two straight edges side-by-side, and then taping them together. Find the volume of the resulting cone.



Mensuration – Practice Sheet #6

1) Given a cube with edges 6" long…

a) Calculate the volume. Give your answer both in ft^3 and in^3.

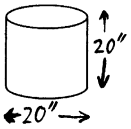
b) Calculate the surface area. Give your answer both in ft^2 and in^2.

2) Given this portion of a circle… 

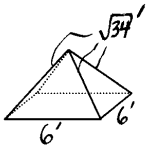
a) Calculate the arc length.

b) Calculate the area of the circle sector.

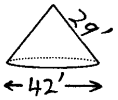
3) Calculate the volume and surface area.

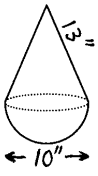
a) 

b) A sphere with a diameter of 20 inches.

c) 

4) Calculate the volume.

a) 

b) 

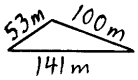
5) A room measuring 30' by 22' by 8' is completely filled with cubic boxes that have one-foot long edges.

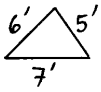
a) What is the volume of the room?

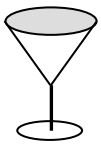
b) How many boxes are in the room?

c) If all the boxes were taken out of the room and put into a straight line, then how long would the line be?

6) Calculate the area.

a) 

b) 

7) *Challenge!* 
A conical drinking glass is 12cm deep and 10cm across at the top. If it is filled halfway to the top, then how full is it? Give your answer as a fraction (e.g. ½ full, ⅓ full, etc.).