

8th Grade Assignment – Week #15

Individual Work

- **Mensuration Practice Sheet #6** (p32): Last week, you did some of the problems on this sheet. Now finish the rest of the problems.
- **Get ready for the test!**
 - Especially look over problems from Sheets #4, #5, and #6.
 - For those people who would like more practice problems, I have included a practice test on the next page. Please keep in mind that the actual test will not be just like the practice test. You still need to make sure you understand all the problems from the workbook practice sheets.
 - The Mensuration Test will be included as part of next week's assignment.

Group Assignments: Here are some options for group work this week. Together, decide what you want to work on.

- 1) Help each other out preparing for the test, including problems from the workbook.
- 2) *Scale factor puzzles.*
 - a) One circle has 7 times the diameter of another circle. What is the area of the larger circle if the smaller one has an area of 200 in^2 ?
 - b) Two similar trapezoids are such that the larger one is 4 times the smaller (in terms of height, base, etc.). If the larger one has an area of 320 m^2 , what is the area of the smaller one?
 - c) One sphere has twice the radius of another sphere. How many times longer is the circumference of the larger than the smaller? If the volume of the smaller sphere is $12\pi \text{ cm}^3$, what is the volume of the larger sphere?
- 3) *Puzzle: A Very Long Rope.* Imagine that there is a rope going around the equator of the earth. The rope is exactly 1000 feet longer than the equator (which is about 24,880 miles long), and the rope is somehow suspended everywhere at an equal height above the surface. Could a horse jump over the rope? Calculate the height that the rope is above the ground. (You may use a calculator for this problem.)
- 4) *Challenge!* Find the surface area of a cone (without its base), that has a 10cm diameter and a 12cm height.

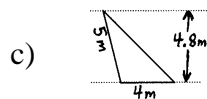
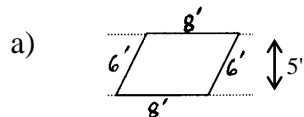
Mensuration – Practice Test

Heron's formula is $A = \sqrt{s(s-a)(s-b)(s-c)}$

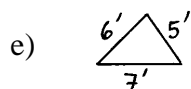
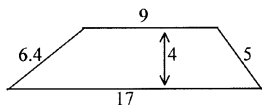
- 1) Find the circumference of this circle



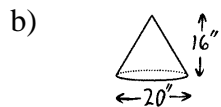
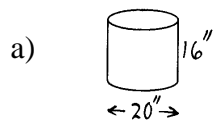
- 2) Find the area of each one:



- d) (all units are ft.)

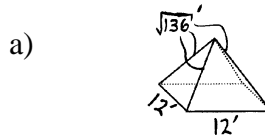


- 3) Find the volume of each one:



- c) A sphere with a diameter of 10 cm.

- 4) Find the surface area of each one:



- b) A sphere with a diameter of 9 inches

Answers

- 1) $14\pi \approx 44$ in
 2) a) 40 ft^2
 b) $49\pi \approx 154 \text{ in}^2$
 c) 9.6 m^2
 d) 52 ft^2
 e) $\sqrt{216} \approx 14.6 \text{ ft}^2$
 3) a) $1600\pi \approx 5024 \text{ in}^3$
 b) $\frac{1600\pi}{3} \approx 1675 \text{ in}^3$
 c) $\frac{500\pi}{3} \approx 523 \text{ cm}^3$
 4) a) 384 ft^2
 b) $81\pi \approx 254 \text{ in}^2$