

Chem 121 – Worksheet #2 – Fall 2015 Monday Lab Student Name: _____

Wednesday Lab Student Name: _____

Complete and/or solve the following. The first 40 minutes, you may not use your notes; you may collaborate with your partner and only your partner. The next 10 minutes you and your partner may refer to your class notes that are linked to Dr. Carman's website and may only be brought in the classroom in paper format for utilization. For the remaining 25 minutes of the period, students will be randomly selected to show their work on the board (it will help if you show your work on the worksheet, as well).

1) $98.6\text{ }^{\circ}\text{F} = \text{_____ K}$

2) Using the factoring (FOIL) method, determine the positive solutions for the following:

$$3x^2 + 10x - 8 = 0$$

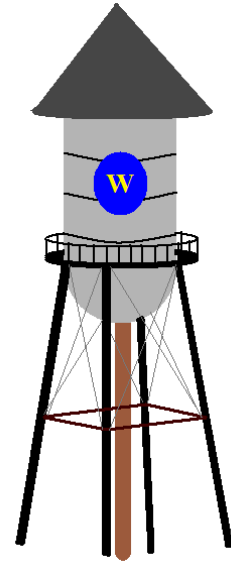
3) Using the quadratic formula, determine the positive solutions to #2.

- 4) What is the anti-log 113.752?
- 5) What is the anti-ln 113.752?
- 6) A cylinder has a diameter of 20 cm and a height of 12 cm. What is its surface area in **square millimeters (mm²)**?
- 7) The solution to the following equation is:

$$7.4 = 6.5 + \log \left(\frac{x}{0.45} \right)$$

- 8) The density of benzene is 0.8765 g/mL. The density of lead is 11.3437 g/mL. What is the specific gravity of the Pb relative to the benzene?
- 9) Your patient's order reads, "5% Glucose Solution, 1L, IV, administered at a rate of 125 mL/hour". You start the IV at 0930. At what time will the IV run out?
- 10) Your patient's order reads, "Crystodigin, 125 μ g, IV". You have a 10 mL vial of Crystodigin that is labeled 0.5 mg/mL. How many mL will you give to your patient?

11) Refer to the image of the water tower for these questions. In the mid-west, many cities depend on water towers for their municipal water supply. They are cylindrical as well as half-spherical on their bottom sides. The tops are roofs that are designed to keep animals and sunlight out of the water so that the water won't cause a public health crisis. The roof is not of actual physical water storage importance. **The height of one specific water tower along its cylindrical edge is 100 feet. The diameter of both the cylinder and the half-sphere is 35 feet.**

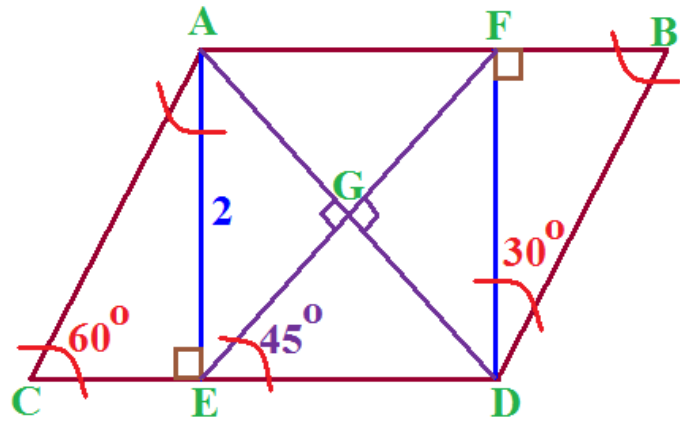


- **What is the volume (in ft^3) of the cylindrical portion of the water tank on the tower?**

- **What is the volume (in ft^3) of the half-spherical portion of the water tank on the tower?**

- **What is the combined volume (in ft^3) of the water tank?**

12) What is the measurement of angle CAE ($\angle CAE$) in degrees?



13) What is the length of line AB in the image for #12?

14) What is the area of parallelogram ABDC in the image for #12?

15) On average, a human heart beats 60 times per minutes. If a person lives to 55 years of age (YOA), how many times did that person's heart beat?