Chemistry: Conversions #2 Show all your work on these problems. This includes the b.f.f! Name

- 1. Convert 72.9 oz to its equivalent in cg.
- 2. Convert 3.55 yd to its equivalent in cm.
- 3. Convert 143.1 mL to its equivalent in pints.
- 4. Convert a speed of 75.7 mi/hr to its equivalent in m/s.
- 5. Convert a density of 18.6 g/mL to its equivalent in lb/ft^3 .

6. A mole of hydrogen molecules contains 6.022×10^{23} molecules and occupies 22.4 L. How many hydrogen molecules are contained in 25.0 mL of this gas?

7. What volume of hydrogen would contain 4.5 X 10^{21} hydrogen molecules? How many moles of hydrogen would this be?

8. A molecule of hydrogen moves at a speed of 115 cm/s. How long will it take to travel the length of a football field (100.0 yd long)?

9. The speed of light is 3.0×10^{10} cm/s. Express this in mi/hr.

10. A sample of sea water contains 0.075 g of sodium chloride per mL of solution. How many moles of sodium chloride are there per L of this solution? A mole of sodium chloride is equivalent to 58.5 g of sodium chloride.

11. A doctor orders that a patient receive 1.5×10^{-3} mole of sodium chloride. The only solution available contains 1.00 g per 100.0 mL of solution. A mole of sodium chloride is equivalent to 58.5 g of sodium chloride. What volume of this solution should the nurse give the patient?

12. A sample of air contains 2.33 X 10^{-4} mg of lead per mL of gas. This air passes through an office, the volume of which is 3.25 X 10^4 L. Seven people normally work in this office. How many µg of lead will each person in the office receive from this sample of air?