

130 Final Exam Equation Sheet

$$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$$

$$^{\circ}\text{C} = \frac{(^{\circ}\text{F} - 32)}{1.8}$$

$$\text{K} = ^{\circ}\text{C} + 273$$

$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$$

$$M = \frac{\text{moles solute}}{\text{L solution}}$$

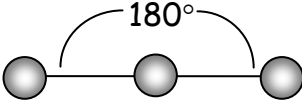
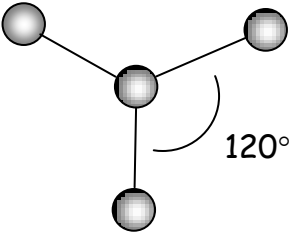
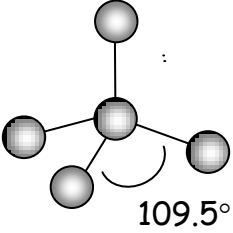
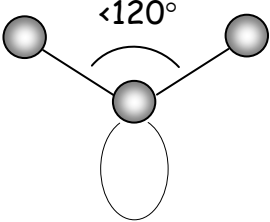
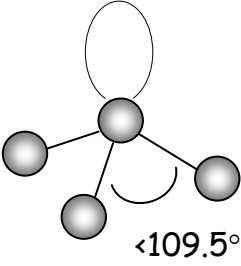
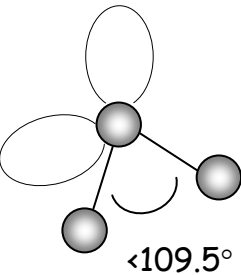
$$\text{mass \% concentration} = \frac{\text{mass of solute}}{\text{mass of solution}} \times 100\%$$

$$1 \text{ mole} = 6.02 \times 10^{23} \text{ particles}$$

$$1 \text{ mole of gas} = 22.4 \text{ L at STP}$$

$$1 \text{ atm} = 760 \text{ torr} = 760 \text{ mm Hg}$$

CHM130 Table of Molecular Shapes and Bond Angles

| General formula | MOLECULAR GEOMETRY | NAME of SHAPE | Bond Angles |
|-----------------|---|------------------|----------------|
| AB_2 |  | linear | 180° |
| AB_3 |  | trigonal planar | 120° |
| AB_4 |  | tetrahedral | 109.5° |
| AB_2E |  | bent or angular | $<120^\circ$ |
| AB_3E |  | trigonal pyramid | $<109.5^\circ$ |
| AB_2E_2 |  | bent or angular | $<109.5^\circ$ |