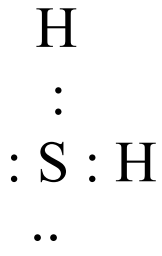
Discussion Section M 10:00 M 11:00 W10:00 W11:00

Name_____

Chem 130 Quiz 2

1. Draw the Lewis dot structure for SH_2.



(This diagram is trying to show 2 loan pairs on the Sulfur atom, and 2 electrons between the sulfur and and each hydrogen.)

2. What is the geometry made by the objects around the sulfur atom? (Count each electron pair or atom as an object.)

tetrahedral trigonal planar linear

3. What is the geometric shape of the atoms in the molecule

tetrahedral trigonal planar linear **bent**

4. In the reaction Cl_2 + 3 F_2 ---> 2 ClF_3 how many moles of Cl_2 are required to produce 1.0 mole of ClF_3?

a) 35.5 mol
b) 1.0 mol
c) 2.0 mol
d) 3.0 mol
e) **0.5 mol**

$$1.0 mole ClF_3 \left(\frac{1 mole Cl_2}{2.0 mole ClF_3} \right) = 0.5 mole Cl_2$$

5. Formaldehyde solution are used to preserve biological samples. A solution is prepared using 9.30 x 10^2 g of formaldehyde and water to prepare 2.50 L of solution. What is the molarity of formaldehyde in this solution? The molar mass of formaldehyde is 30.027g/mole.

a) 11.2
b) 12.0
c) 11.4
d) 12.4
e) 11.9

Known:
9.30x10^2g For.
2.50L solution
30.027g For./1 mole For.

Need to Know:
? M For. =
? moles For./1Liter Solution

1. Find moles For.

$$930 g For. \left(\frac{1 mole For.}{30.027 g For} \right) = 30.97 moles For.$$

2. Calculate moles For./1 Liter Solution

$$\left(\frac{30.97 moles For.}{2.5 L solution} \right) = \frac{12.39 moles For.}{1 L solution}$$
$$= 12.4 M For.$$