Stoichiometry Homework **2019** **Name:** _____

Due gr01/03 (Fri. Sept.27) gr02 (Mon.Sept.30)

Show all your work, balance the equations and indicate the units in your final answer.

1. Name the following compounds: (4)

a) B_6Si hexaboron monosilicide b) HI hydrogen iodide

c) N_2O_3 dinitrogen trioxide d) MnS manganese (II) sulfide

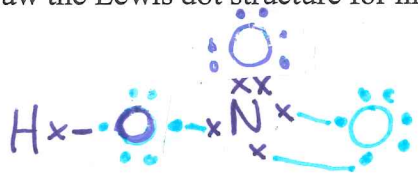
2. Give the chemical formula for: (3)

a) Potassium nitrate KNO_3

b) Copper (I) oxide Cu_2O

c) Mercury (II) oxide HgO

3. Draw the Lewis dot structure for nitric acid (HNO_3).(1)



H-O-N=O

4. Consider the following equation: (2) **$1\ Na_2O + 1\ H_2O \rightarrow 2\ NaOH$**

Don't count S.F.

How many moles of sodium hydroxide can be produced from 8 moles of sodium oxide?

$8 \times 2 =$ 16 moles of NaOH

2×10^1 moles NaOH

5. Consider the following reaction: (4) **$1\ Cu + 2\ AgNO_3 \rightarrow 2\ Ag + 1\ Cu(NO_3)_2$**

How many moles of silver (Ag) will be produced from 16.0 g of copper (Cu), assuming that $AgNO_3$ is available in excess.

$$\frac{1\ mol\ Cu}{x} = \frac{63.55\ g}{16.0\ g}$$

$x = 0.251770\ mol\ Cu$

$$\frac{1\ mol\ Cu}{0.251770\ mol\ Cu} = \frac{2\ mol\ Ag}{x}$$

$x = 0.503541\ mol\ Ag$

$0.504\ mol\ Ag$

6. Consider the following reaction: (4) **$2CuCl + 1\ H_2S \rightarrow 1\ Cu_2S + 2HCl$**

How many grams of Cu_2S can be produced from 9.9 g of CuCl reacting with H_2S?

$$\frac{198.0\ g\ CuCl}{9.9\ g\ CuCl} = \frac{159.17\ Cu_2S}{x}$$

$x = 7.95850$

2 sig. fig. $8.0\ g\ Cu_2S$