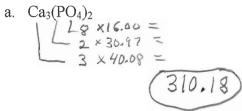
SHOW ALL WORK TO RECEIVE CREDIT.

MOLAR MASSES: H 1.008, C 12.01, O 16.00, Na 22.99, P 30.97, S 32.06, Cl 35.45,

Ca 40.08, Ba 137.3

Avogadro's number: 6.02 x 10²³/mol

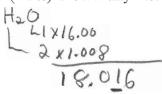
1. (6 Pts) Determine the molar mass of each of the following:



b.
$$Na_2SO_4$$

$$1 \times 32.06 = 2 \times 22.99 = 142.04$$

2. (4 Pts) How many moles are there in 25.45 g of water?



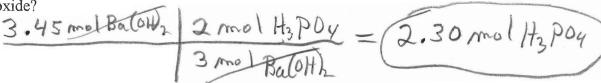
3. (4 Pts) A chemical reaction calls for 3.00 moles of calcium chloride. How many grams of calcium chloride should be used?

4. (5 Pts) A compound consists of 31.1% sulfur and 68.9% chlorine by mass. Determine its empirical formula. Use 100 2 so,

S: $31.19 \mid mol = 0.970 \div 0.970 = 1$ Ce: $68.99 \mid mol = 1.944 \div 0.976 = 2$



- $H_3PO_4(aq) + 3Ba(OH)_2 \rightarrow 6H_2O(1) + Ba_3(PO_4)_2(aq)$ 5. a)
- 3.45mol > ? mol
- a. (3 Pts) How many moles of phosphoric acid would be required to neutralize 3.45 moles of barium hydroxide?



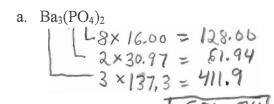
b. (3 Pts) How many moles of water are produced by the amounts used in 5a?

SHOW ALL WORK TO RECEIVE CREDIT.

MOLAR MASSES: H 1.008, C 12.01, O 16.00, Na 22.99, P 30.97, S 32.06, Cl 35.45, Ca 40.08, Ba 137.3

Avogadro's number: 6.02 x 10²³/mol

1. (6 Pts) Determine the molar mass of each of the following:



2. (4 Pts) How many moles are there in 45.45 g of water?

H₂0 $L_{1\times16.06} = 16.06$ $L_{1\times16.06} = 2.016$ $L_{1\times16.06} = 2.016$

3. (4 Pts) A chemical reaction calls for 5.00 moles of calcium chloride. How many grams of calcium chloride should be used?

(a Cl 2 2x35.41 7 110.90 5.00 moltales 110,90 g = (555 9 Calls

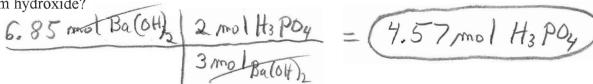
4. (5 Pts) A compound consists of 31.1% sulfur and 68.9% chlorine by mass. Determine its empirical formula. Use 100g

S:
$$\frac{31.19 \text{ mol}}{32.069} = 0.970 \div 0.970 = 1$$

Cl: $\frac{68.99 \text{ mol}}{35.459} = 1.944 \div 0.970 = 2$



- $2H_3PO_4(aq) + 3Ba(OH)_2 \rightarrow 6H_2O(1) + Ba_3(PO_4)_2(aq)$
- 6.85 mol 7 ? ma
- a. (3 Pts) How many moles of phosphoric acid would be required to neutralize 6.85 moles of barium hydroxide?



b. (3 Pts) How many moles of water are produced by the amounts used in 5a?