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Molar masses: Na 23.00; P 30.97; O 16.00; N 14.01; H 1.008;

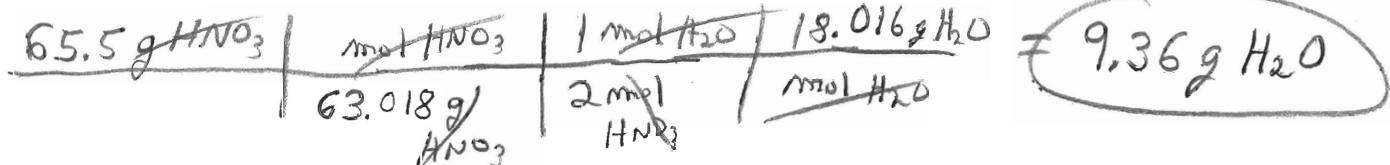
1. (5 Pts) Calculate the mass percent (% Na) of Na in
- Na_3PO_4
- .

$$\% \text{ Na} = \frac{69.00}{163.97} \times 100 = 42.08\%$$

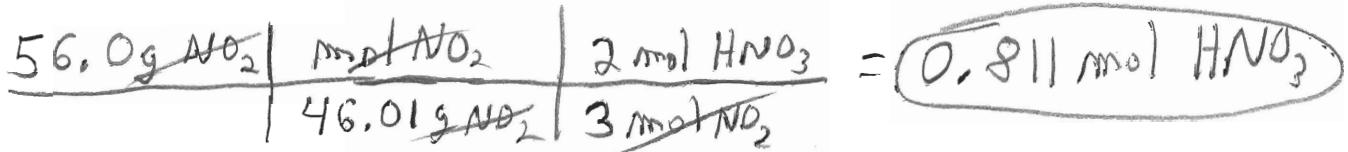
L $\frac{4 \times 16.00}{1 \times 30.97} = \frac{64.00}{30.97}$
 3 $\times 23.00 = \frac{69.00}{163.97}$

2. Given the reaction:
- $3\text{NO}_2(\text{g}) + \text{H}_2\text{O}(\text{l}) \rightarrow 2\text{HNO}_3(\text{aq}) + \text{NO}(\text{g})$

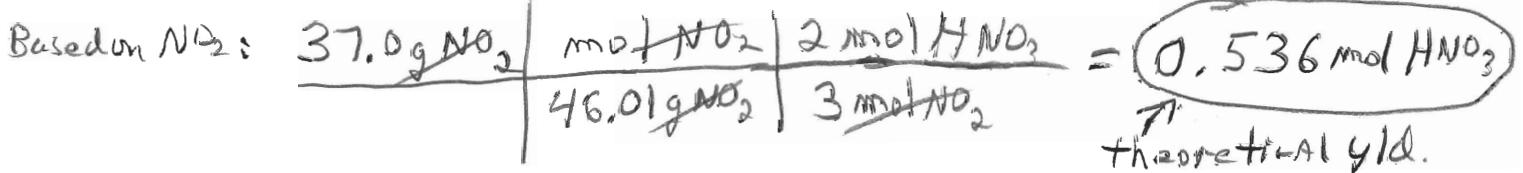
- a. (5 Pts) How many grams of water are needed to form 65.5 grams of
- HNO_3
- ?



- b. (6 Pts) How many moles of
- HNO_3
- can be formed from 56.0 grams of
- NO_2
- ?



- c. (7 Pts) How many moles of
- HNO_3
- can be prepared from 37.0 grams of
- NO_2
- and 33.0 grams of water?



- d. (2 Pts) How many moles of
- NO_2
- are needed to produce 28.6 moles
- HNO_3
- ?

