

# hints to help you start tonight's homework

# ANSWERS

## Grams, moles.

Chemistry: <http://genest.weebly.com>

Stop in for help every day at lunch and Tues & Thurs after school!



Justine Ouzganes & Sarah Outen, first modern crossing of the Aleutian Islands by kayak

Name \_\_\_\_\_

Period \_\_\_\_\_

1. Find the number of grams of  $O_2$  which are needed to produce 20.0 g of  $P_2O_5$  at STP, according to this balanced equation:



20.0 g $P_2O_5$	$\frac{1 \text{ mol } P_2O_5}{141.94 \text{ g } P_2O_5}$	$\frac{5 \text{ mol } O_2}{2 \text{ mol } P_2O_5}$	$\frac{32.00 \text{ grams } O_2}{1 \text{ mol } O_2}$	=
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~~you may use the molar masses you found in the previous problem!~~

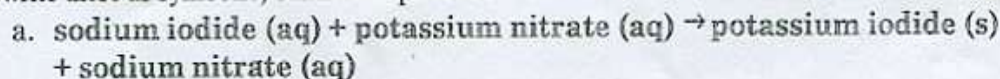
2. For the same reaction described in the previous problem, find the number of grams of  $O_2$  which are needed to produce  $9.34 \times 10^{-4}$  g of  $P_2O_5$  at STP

$$9.34 \times 10^{-4} \text{ g } P_2O_5 \times \left( \frac{1 \text{ mol } P_2O_5}{141.94 \text{ g } P_2O_5} \right) \times \left( \frac{5 \text{ mol } O_2}{2 \text{ mol } P_2O_5} \right) \times \left( \frac{32.00 \text{ gram } O_2}{1 \text{ mol } O_2} \right) =$$

3. For the same reaction described in the previous problem, find the number of grams of  $P_4$  which are needed to react with  $5.35 \times 10^5$  g of  $O_2$  at STP

$$5.35 \times 10^5 \text{ g } O_2 \times \left( \frac{1 \text{ mol } O_2}{32.00 \text{ grams } O_2} \right) \times \left( \frac{1 \text{ mol } P_4}{5 \text{ mol } O_2} \right) \times \left( \frac{123.88 \text{ grams } P_4}{1 \text{ mol } P_4} \right) =$$

4. Rewrite these as symbolic, balanced equations:



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5. For this balanced reaction, calculate the following



a. If 0.446 moles of oxygen gas react, how many moles of  $\text{C}_6\text{H}_6$  will react?

$$0.446 \text{ mol O}_2 \times \left( \frac{\text{mol C}_6\text{H}_6}{\text{mol O}_2} \right) =$$

just  
one  
step  
necessary!

b. If  $3.44 \times 10^4$  moles of carbon dioxide form, how many moles of  $\text{C}_6\text{H}_6$

$$3.44 \times 10^4 \text{ mol CO}_2 \times \left( \frac{\text{mol C}_6\text{H}_6}{\text{mol CO}_2} \right) =$$

c. If 0.094 moles of oxygen gas react, how many moles of carbon dioxide will form?

6. For this balanced reaction, calculate the following



a. If 0.746 moles of water react, how many moles of  $\text{CaH}_2$  will react?

b. If  $7.40 \times 10^{-3}$  moles of calcium hydroxide form, how many moles of  $\text{H}_2\text{O}$  reacted?

c. If 9.94 moles of calcium hydride react, how many moles of hydrogen gas will form?

8. (Just for fun) Email to me the name of a woman that you would like to see in one of our worksheets this month for women's history month.