



1. **Directions:** Calculate the molar mass for the following. All answers should have one number past the decimal. Show all work on back!

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|---------------------------------------|---------------------------------|-------------------------------------|
| a. H_2O_2 _____ | d. He _____ | g. CuSO_4 _____ |
| b. $\text{Al}(\text{NO}_3)_3$ _____ | e. KI _____ | h. $\text{Pb}(\text{NO}_3)_2$ _____ |
| c. $(\text{NH}_4)_2\text{CO}_3$ _____ | f. P_2O_5 _____ | |

2. **Directions:** Use the above values to answer the problems below. Show all work for full credit, label all units and use dimensional analysis to solve the problem. Watch your significant figures.

a. How many moles are there in 3.4 g of hydrogen peroxide (H_2O_2)?

b. How many moles are there in 4.5×10^{24} molecules of hydrogen peroxide (H_2O_2)?

c. How many grams are in 5.6×10^{24} molecules of hydrogen peroxide (H_2O_2)?

d. How many moles are in 639 grams of aluminum nitrate?

e. How many grams are in 3.4 moles of ammonium carbonate?

f. How many grams are in 0.20 moles of copper (II) sulfate?

g. How many moles are in 6.02×10^{21} atoms of He?

h. How many grams are in 3.09×10^{22} molecules of potassium iodide?

i. How many moles are in 662 grams of lead (II) nitrate?

j. How many oxygen atoms are in 662 grams of lead (II) nitrate?
(*hint: your conversion factor is 1 formula unit lead nitrate = ? oxygen atoms*)

Answers:

- 1a) 34.0 g H_2O_2
- b) 213.0 g $Al(NO_3)_3$
- c) 96.0 g $(NH_4)_2CO_3$
- d) 4.0 g He
- e) 166.0 g KI
- f) 142.0 g P_2O_5
- g) 159.6 g $CuSO_4$
- h) 331.2 g $Pb(NO_3)_2$

- 2a) 0.10 mol H_2O_2
- b) 7.5 moles H_2O_2
- c) 320 g H_2O_2
- d) 3.00 mole $Al(NO_3)_3$
- e) 330 g $(NH_4)CO_3$
- f) 32 g $CuSO_4$
- g) 0.0100 mole He
- h) 8.52 g KI
- i) 2.00 moles $Pb(NO_3)_2$
- j) 7.22×10^{24} atoms oxygen