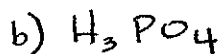


# Mole Problems #0 - Answer Key



$$\left. \begin{array}{l} 2 \times \text{Fe} = 2 \text{ mol} \times 55.8 \text{ g/mol} = 111.6 \text{ g} \\ 3 \times \text{O} = 3 \text{ mol} \times 16.0 \text{ g/mol} = 48.0 \text{ g} \end{array} \right\} \text{ADD} = \boxed{159.6 \text{ g}}$$



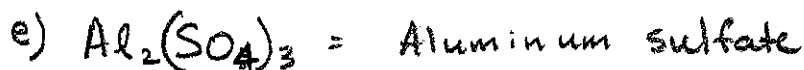
$$\left. \begin{array}{l} 3 \times \text{H} = 3 \text{ mol} \times 1.0 \text{ g/mol} = 3.0 \text{ g} \\ 1 \times \text{P} = 1 \text{ mol} \times 31.0 \text{ g/mol} = 31.0 \text{ g} \\ 4 \times \text{O} = 4 \text{ mol} \times 16.0 \text{ g/mol} = 64.0 \text{ g} \end{array} \right\} \text{ADD} = \boxed{98.0 \text{ g}}$$



$$\left. \begin{array}{l} 5 \times \text{Be} = 5 \text{ mol} \times 9.0 \text{ g/mol} = 45.0 \text{ g} \\ 2 \times \text{As} = 2 \text{ mol} \times 74.9 \text{ g/mol} = 149.8 \text{ g} \end{array} \right\} \text{ADD} = \boxed{194.8 \text{ g}}$$



$$\left. \begin{array}{l} 2 \times \text{Rb} = 2 \text{ mol} \times 85.5 \text{ g/mol} = 171.0 \text{ g} \\ 1 \times \text{S} = 1 \text{ mol} \times 32.1 \text{ g/mol} = 32.1 \text{ g} \\ 3 \times \text{O} = 3 \text{ mol} \times 16.0 \text{ g/mol} = 48.0 \text{ g} \end{array} \right\} \text{ADD} = \boxed{251.1 \text{ g}}$$



$$\left. \begin{array}{l} 2 \times \text{Al} = 2 \text{ mol} \times 27.0 \text{ g/mol} = 54.0 \text{ g} \\ 3 \times \text{S} = 3 \text{ mol} \times 32.1 \text{ g/mol} = 96.3 \text{ g} \\ 12 \times \text{O} = 12 \text{ mol} \times 16.0 \text{ g/mol} = 192.0 \text{ g} \end{array} \right\} \text{ADD} = \boxed{342.3 \text{ g}}$$



$$\left. \begin{array}{l} 1 \times \text{Mg} = 1 \text{ mol} \times 24.3 \text{ g/mol} = 24.3 \text{ g} \\ 2 \times \text{O} = 2 \text{ mol} \times 16.0 \text{ g/mol} = 32.0 \text{ g} \\ 2 \times \text{H} = 2 \text{ mol} \times 1.0 \text{ g/mol} = 2.0 \text{ g} \end{array} \right\} \text{ADD} = \boxed{58.3 \text{ g}}$$

2. a)  $2.50 \text{ mol K}_2\text{CrO}_4$  |  $194.2 \text{ g K}_2\text{CrO}_4$

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=  $485.5 \text{ g K}_2\text{CrO}_4$

=  $486 \text{ g K}_2\text{CrO}_4$  (SIG FIGS)

b)  $0.25 \text{ mol Ba}(\text{NO}_3)_2$  |  $261.3 \text{ g Ba}(\text{NO}_3)_2$

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=  $65.3 \text{ g Ba}(\text{NO}_3)_2$

=  $65 \text{ g Ba}(\text{NO}_3)_2$

$$c) \frac{0.375 \text{ mol Na}_2\text{Cr}_2\text{O}_7}{1 \text{ mol Na}_2\text{Cr}_2\text{O}_7} = 262 \text{ g Na}_2\text{Cr}_2\text{O}_7 = \boxed{98.3 \text{ g Na}_2\text{Cr}_2\text{O}_7}$$

$$d) \frac{0.25 \text{ mol NaCH}_3\text{COO}}{1 \text{ mol NaCH}_3\text{COO}} = 82 \text{ g NaCH}_3\text{COO} = \boxed{21 \text{ g NaCH}_3\text{COO}}$$

$$e) \frac{0.418 \text{ mol Fe(NO}_3)_3}{1 \text{ mol Fe(NO}_3)_3} = 241.8 \text{ g Fe(NO}_3)_3 = \boxed{101 \text{ g Fe(NO}_3)_3}$$

$$f) \frac{1.872 \text{ mol Cu(CH}_3\text{COO)}_2}{1 \text{ mol Cu(CH}_3\text{COO)}_2} = 181.5 \text{ g Cu(CH}_3\text{COO)}_2 = \boxed{339.8 \text{ g Cu(CH}_3\text{COO)}_2}$$

$$3.a) \frac{50.0 \text{ g C}_6\text{H}_{12}\text{O}_6}{180 \text{ g C}_6\text{H}_{12}\text{O}_6} = 1 \text{ mol C}_6\text{H}_{12}\text{O}_6 = \boxed{0.278 \text{ mol C}_6\text{H}_{12}\text{O}_6}$$

$$b) \frac{25.00 \text{ g K}_3\text{PO}_4}{212.3 \text{ g K}_3\text{PO}_4} = 1 \text{ mol K}_3\text{PO}_4 = \boxed{0.1178 \text{ mol K}_3\text{PO}_4}$$

$$c) \frac{15.57 \text{ g Bi(OH)}_3}{260.0 \text{ g Bi(OH)}_3} = 1 \text{ mol Bi(OH)}_3 = \boxed{0.05988 \text{ mol Bi(OH)}_3}$$

$$d) \frac{3.50 \text{ g AsCl}_3}{181.4 \text{ g AsCl}_3} = 1 \text{ mol AsCl}_3 = \boxed{0.0193 \text{ mol AsCl}_3}$$

$$e) \frac{27.85 \text{ g Fe}_3(\text{PO}_4)_2}{357.4 \text{ g Fe}_3(\text{PO}_4)_2} = 1 \text{ mol Fe}_3(\text{PO}_4)_2 = \boxed{0.07792 \text{ mol Fe}_3(\text{PO}_4)_2}$$

$$f) \frac{4.90 \text{ g Al}_2(\text{CO}_3)_3}{234 \text{ g Al}_2(\text{CO}_3)_3} = 1 \text{ mol Al}_2(\text{CO}_3)_3 = \boxed{0.0209 \text{ mol Al}_2(\text{CO}_3)_3}$$