



a) $2.46 \text{ g H}_2\text{O} \times \frac{1 \text{ mol H}_2\text{O}}{18.02 \text{ g H}_2\text{O}} = 0.137 \text{ mol H}_2\text{O}$

b) $0.137 \text{ mol H}_2\text{O} \times \frac{2 \text{ mol C}_4\text{H}_{10}}{10 \text{ mol H}_2\text{O}} = 0.0273 \text{ mol C}_4\text{H}_{10}$

OR

$$2.46 \text{ g H}_2\text{O} \times \frac{1 \text{ mol H}_2\text{O}}{18.02 \text{ g H}_2\text{O}} \times \frac{2 \text{ mol C}_4\text{H}_{10}}{10 \text{ mol H}_2\text{O}} = 0.0273 \text{ mol C}_4\text{H}_{10}$$

c) $0.0273 \text{ mol C}_4\text{H}_{10} \times \frac{58.14 \text{ g C}_4\text{H}_{10}}{1 \text{ mol C}_4\text{H}_{10}} = 1.59 \text{ g C}_4\text{H}_{10}$

OR

$$2.46 \text{ g H}_2\text{O} \times \frac{1 \text{ mol H}_2\text{O}}{18.02 \text{ g H}_2\text{O}} \times \frac{2 \text{ mol C}_4\text{H}_{10}}{10 \text{ mol H}_2\text{O}} \times \frac{58.14 \text{ g C}_4\text{H}_{10}}{1 \text{ mol C}_4\text{H}_{10}} = 1.59 \text{ g C}_4\text{H}_{10}$$

d) $2.46 \text{ g H}_2\text{O} \times \frac{1 \text{ mol H}_2\text{O}}{18.02 \text{ g H}_2\text{O}} \times \frac{13 \text{ mol O}_2}{10 \text{ mol H}_2\text{O}} \times \frac{32.00 \text{ g O}_2}{1 \text{ mol O}_2} = 5.68 \text{ g O}_2$



a) $25 \text{ mol C}_2\text{H}_6\text{O} \times \frac{3 \text{ mol O}_2}{1 \text{ mol C}_2\text{H}_6\text{O}} = 75 \text{ mol O}_2$

b) $30 \text{ mol O}_2 \times \frac{1 \text{ mol C}_2\text{H}_6\text{O}}{3 \text{ mol O}_2} = 10 \text{ mol C}_2\text{H}_6\text{O}$

$$30 \text{ mol O}_2 \times \frac{2 \text{ mol CO}_2}{3 \text{ mol O}_2} = 20 \text{ mol CO}_2$$

c) $23 \text{ mol CO}_2 \times \frac{3 \text{ mol O}_2}{2 \text{ mol CO}_2} = 34.5 \text{ mol O}_2$

d) $41 \text{ mol H}_2\text{O} \times \frac{3 \text{ mol O}_2}{3 \text{ mol H}_2\text{O}} = 41 \text{ mol O}_2$

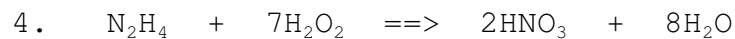
$$41 \text{ mol H}_2\text{O} \times \frac{2 \text{ mol CO}_2}{3 \text{ mol H}_2\text{O}} = 27.3 \text{ mol CO}_2$$



a) $25 \text{ mol Fe}_2\text{O}_3 \times \frac{2 \text{ mol Fe}}{1 \text{ mol Fe}_2\text{O}_3} = 50 \text{ mol Fe}$

b) $30 \text{ mol Fe} \times \frac{3 \text{ mol H}_2}{2 \text{ mol Fe}} = 45 \text{ mol H}_2$

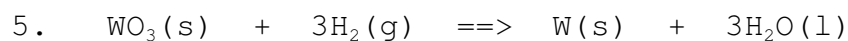
c) $120 \text{ mol H}_2\text{O} \times \frac{1 \text{ mol Fe}_2\text{O}_3}{3 \text{ mol H}_2\text{O}} \times \frac{159.7 \text{ g Fe}_2\text{O}_3}{1 \text{ mol Fe}_2\text{O}_3} = 6388 \text{ g Fe}_2\text{O}_3$



a) $2.68 \text{ mol N}_2\text{H}_4 \times \frac{7 \text{ mol H}_2\text{O}_2}{1 \text{ mol N}_2\text{H}_4} = 18.76 \text{ mol H}_2\text{O}_2$

b) $2.68 \text{ mol N}_2\text{H}_4 \times \frac{2 \text{ mol HNO}_3}{1 \text{ mol N}_2\text{H}_4} = 5.36 \text{ mol HNO}_3$

c) $2.68 \text{ mol N}_2\text{H}_4 \times \frac{8 \text{ mol H}_2\text{O}}{1 \text{ mol N}_2\text{H}_4} = 21.44 \text{ mol H}_2\text{O}$



a) $250 \text{ g WO}_3 \times \frac{1 \text{ mol WO}_3}{231.84 \text{ g WO}_3} \times \frac{1 \text{ mol W}}{1 \text{ mol WO}_3} \times \frac{183.84 \text{ g W}}{1 \text{ mol W}} = 198 \text{ g W}$

b) $250 \text{ g WO}_3 \times \frac{1 \text{ mol WO}_3}{231.84 \text{ g WO}_3} \times \frac{3 \text{ mol H}_2}{1 \text{ mol WO}_3} \times \frac{2.02 \text{ g H}_2}{1 \text{ mol H}_2} = 6.53 \text{ g H}_2$