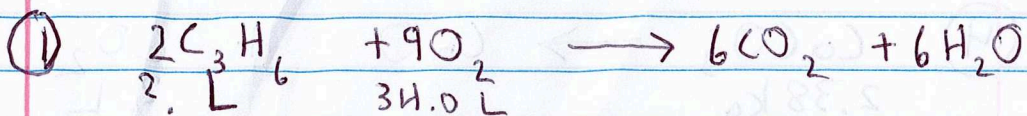
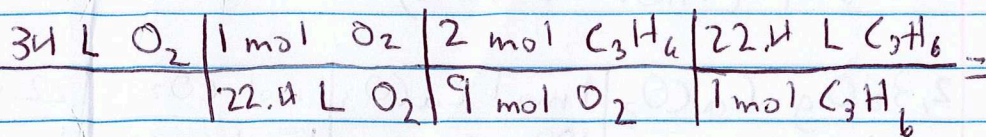


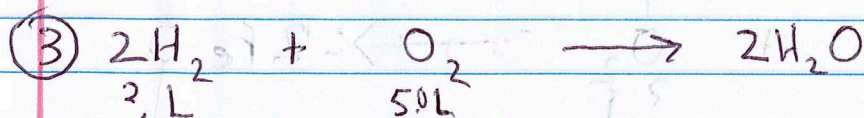
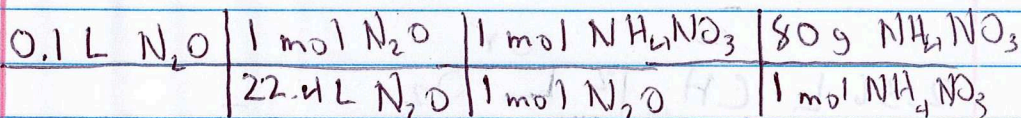
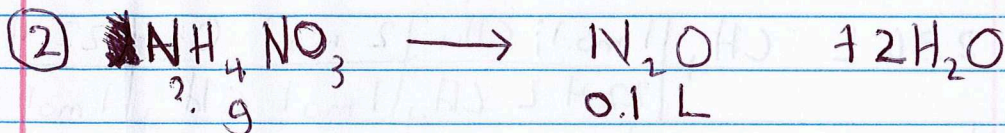
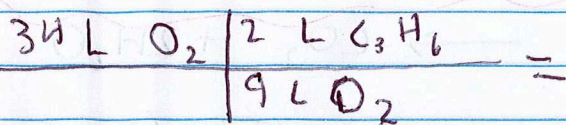
L.T 8.2 Work



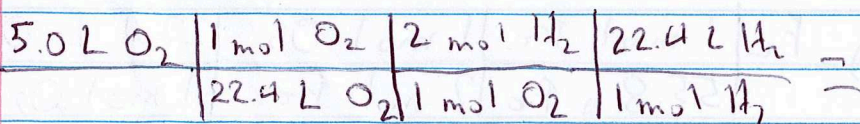
At STP (1 mol = 22.4 L)



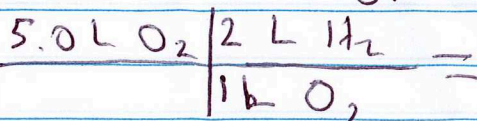
or

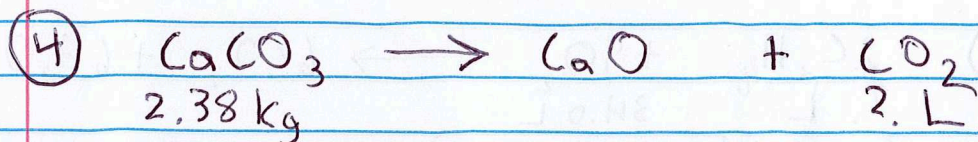


At STP (1 mol = 22.4 L)



or

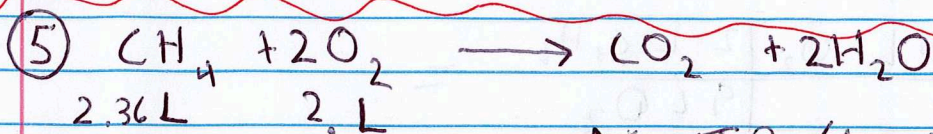




At STP (1 mol = 22.4 L)

$$\frac{2,380 \text{ g CaCO}_3}{100 \text{ g CaCO}_3} \times \frac{1 \text{ mol CaCO}_3}{1 \text{ mol CaCO}_3} \times \frac{1 \text{ mol CO}_2}{1 \text{ mol CaCO}_3} \times \frac{22.4 \text{ L CO}_2}{1 \text{ mol CO}_2}$$

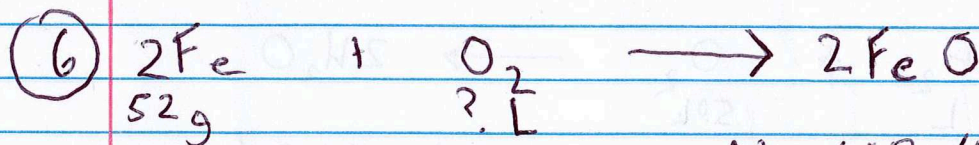
=



At STP (1 mol = 22.4 L)

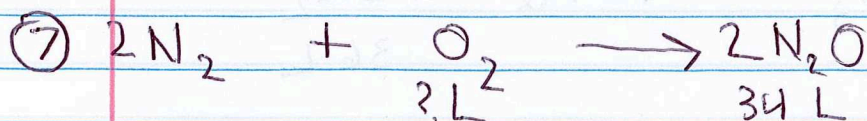
$$\frac{2.36 \text{ L CH}_4}{22.4 \text{ L CH}_4} \times \frac{1 \text{ mol CH}_4}{1 \text{ mol CH}_4} \times \frac{2 \text{ mol O}_2}{1 \text{ mol CH}_4} \times \frac{22.4 \text{ L O}_2}{1 \text{ mol O}_2}$$

$$\frac{2.36 \text{ L CH}_4}{1 \text{ L CH}_4} \times \frac{2 \text{ L O}_2}{1 \text{ L CH}_4} =$$



At STP (1 mol = 22.4 L)

$$\frac{52 \text{ g Fe}}{55.8 \text{ g Fe}} \times \frac{1 \text{ mol Fe}}{1 \text{ mol Fe}} \times \frac{1 \text{ mol O}_2}{2 \text{ mol Fe}} \times \frac{22.4 \text{ L O}_2}{1 \text{ mol O}_2}$$



$$\frac{34 \text{ L N}_2\text{O}}{2 \text{ L N}_2\text{O}} \Bigg| \frac{1 \text{ L O}_2}{2 \text{ L N}_2\text{O}} =$$

$\textcircled{8}$ * All ratios are 1:1 (Balanced)

$$\frac{28 \text{ g BS}}{84 \text{ g BS}} \Bigg| \frac{1 \text{ mol BS}}{1 \text{ mol BS}} \Bigg| \frac{1 \text{ mol CO}_2}{1 \text{ mol BS}} = 0.33 \text{ mol CO}_2$$

$$P = 1 \text{ atm}$$

$$V = ?$$

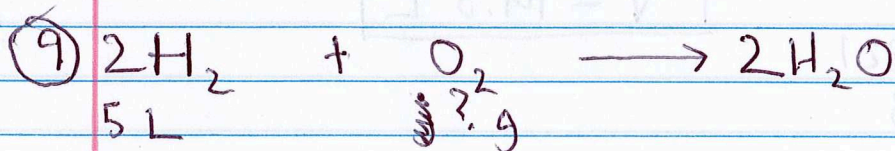
$$n = 0.33$$

$$R = 0.0821$$

$$T = 293$$

$$V = 0.33(0.0821)(293)$$

$$V = 7.9 \text{ L CO}_2$$



* must find n using $PV = nRT$

$$P = 80.1 \text{ kPa}$$

$$80.1(5) = n(8.31)(293)$$

$$V = 5 \text{ L}$$

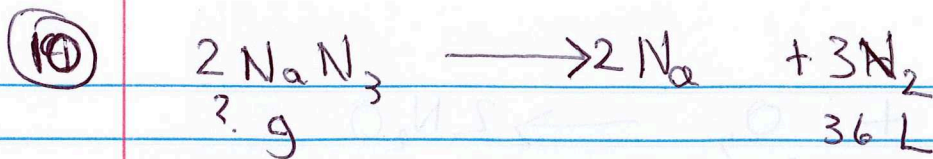
$$n = 0.16 \text{ mol H}_2$$

$$n = ?$$

$$R = 8.31$$

$$0.16 \text{ mol H}_2 \Bigg| \frac{1 \text{ mol O}_2}{2 \text{ mol H}_2} \Bigg| \frac{32 \text{ g O}_2}{1 \text{ mol O}_2} =$$

$$T = 293$$



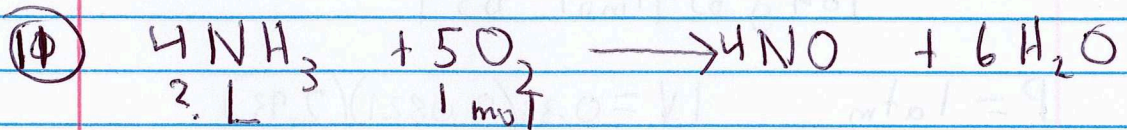
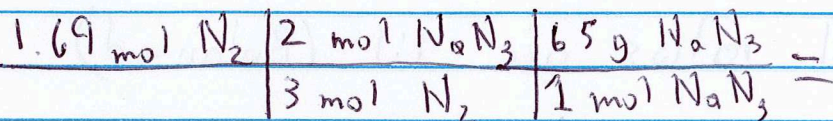
$$P = 1.15 \quad 1.15(36) = n(0.0821)(299)$$

$$V = 36 \text{ L}$$

$$n = ? \text{ N}_2 \quad n = 1.69 \text{ mol N}_2$$

$$R = 0.0821$$

$$T = 299$$



$$\frac{1 \text{ mol O}_2}{5 \text{ mol O}_2} \left| \frac{4 \text{ mol NH}_3}{4 \text{ mol NH}_3} \right| = 0.8 \text{ mol NH}_3$$

$$P = 5 \text{ atm}$$

$$V = ?$$

$$n = 0.8$$

$$R = 0.0821$$

$$T = 1123$$

$$5V = 0.8(0.0821)(1123)$$

$$V = 14.8 \text{ L}$$