CHAPTER 8	**Percentage Yield Problems**	BLM 8.2.1
ASSESSMENT		

1.
$$N_2(g) + 3H_2(g) \rightarrow 2\ NH_3(g)$$

When 7.5×10^1 g of nitrogen gas reacts with sufficient hydrogen gas, the theoretical yield of ammonia is 9.10g. If 1.72 g of ammonia is obtained by experiment, what is the percentage yield of the reaction?

2. 20.0 g of bromic acid, $HBrO_3$, is reacted with excess HBr.

$$HBrO_3(aq)\ +\ \ 5HBr(aq)\ \ \rightarrow\ \ 3H_2O(\ell)\ +\ \ 3Br_2(aq)$$
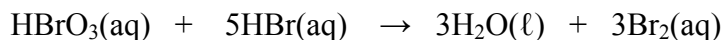
(a) What is the predicted yield of Br_2 for this reaction?

(b) If 47.3 g of Br_2 is produced, what is the percentage yield of Br_2?

3. In order to produce a lead(II) chromate precipitate, lead(II) chloride reacts with sodium chromate in solution. A 12.5 g mass of lead(II) chloride is mixed into solution, and is allowed to react with excess sodium chromate.

(a) What is the predicted yield of lead(II) chromate?

(b) Calculate the percentage yield if 13.8 g of lead(II) chromate is produced
experimentally.

4. When calcium carbonate reacts with hydrogen chloride, the products are calcium
chloride, carbon dioxide and water. If this reaction occurs with 81.5% yield, what mass of
carbon dioxide will be collected if 15.7 g of calcium carbonate is added to sufficient
hydrogen chloride?