Mole – Mass Problems

Name:

Show your work to receive credit! Do not forget to balance the equations before you begin.

1. Phosphorus burns in air according to the following equation:

   $P + O_2 \longrightarrow P_4O_{10}$

   a. What mass of phosphorus will be needed to produce 3.25 moles of P_4O_{10}?

   b. If 0.489 moles of P burns, what mass of oxygen is used, and what mass of P_4O_{10} is produced?

2. Hydrogen peroxide breaks down releasing oxygen, according the following equation:

   $H_2O_2 \longrightarrow H_2O + O_2$

   a. What mass of oxygen is produced when 1.84 mol of H_2O_2 decomposes?

   b. What mass of water is produced when 5.00 moles of oxygen is produced by this reaction?

Answers: 1a: 403g, 1b: 19.6g O_2, 34.7g P_4O_{10}, 2a: 29.4g, 2b: 180g