Extra practice (like HW 7.24): Stoichiometry Conversions

Directions: Perform the following conversions. Show all work including problem set-up with conversion factors, units, and unrounded answers. Box or circle your final answers rounded to the correct significant figures with units.

Use the balanced equation below to answer the next three questions.

2 PCl₃ + 3 H₂Se → P₂Se₃ + 6 HCl

1. How many moles of H₂Se are reacted if 93.2 grams of HCl are produced?

2. How many grams of H₂Se are reacted if 1000.0 grams of PCl₃ are reacted?

3. How many grams of P₂Se₃ are produced if 8.15 × 10²³ molecules of H₂Se are reacted?

Use the balanced equation below to answer the next three questions.

2 Al(OH)₃ → Al₂O₃ + 3 H₂O

4. How many moles of Al(OH)₃ are reacted if 72.5 grams of H₂O are produced?
5. How many grams of Al(OH)$_3$ are reacted if 15.8 grams of Al$_2$O$_3$ are produced?

6. How many formula units of Al$_2$O$_3$ are produced if 0.208 moles of H$_2$O are produced?

Use the balanced equation below to answer the next three questions.

$$2 \text{C}_{10}\text{H}_{22} + 31 \text{O}_2 \rightarrow 20 \text{CO}_2 + 22 \text{H}_2\text{O}$$

7. If 0.085 mol C$_{10}$H$_{22}$ is reacted, how many moles H$_2$O are produced?

8. If 92.5 grams H$_2$O are produced, how many grams of CO$_2$ are produced?

9. If 2.85 moles of C$_{10}$H$_{22}$ are reacted, how many molecules of H$_2$O are produced?