How many atoms are in a sample of copper with a mass of 18.46 grams?

\[
? \text{ atoms Cu} = \frac{18.46 \text{ g Cu}}{63.5 \text{ g Cu}} \times \frac{1 \text{ mol Cu}}{6.02 \times 10^{23} \text{ atoms Cu}}  = 1.75 \times 10^{23} \text{ atoms Cu}
\]

How many formula units are in a sample of salt with a mass of 67.69 grams?

\[
? \text{ f.u. NaCl} = \frac{67.69 \text{ g NaCl}}{58.5 \text{ g NaCl}} \times \frac{1 \text{ mol NaCl}}{6.02 \times 10^{23} \text{ f.u. NaCl}}  = 6.97 \times 10^{23} \text{ f.u. NaCl}
\]

How many molecules are in a sample of water with a mass of 44.99 grams?

\[
? \text{ molecules } H_2O = \frac{44.99 \text{ g } H_2O}{18.0 \text{ g } H_2O} \times \frac{1 \text{ mol } H_2O}{6.02 \times 10^{23} \text{ molecules } H_2O}  = 1.50 \times 10^{24} \text{ molecules } H_2O
\]