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

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

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

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

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

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