

# Warm up Set 1 Two Questions

1. HRW6 22.P.019. [52295] What is the total charge in coulombs of 83.0 kg of electrons?

$$\text{Number of electrons} = 83.0 \text{ kg} / 9.11 \times 10^{-31} \text{ kg} = 9.11 \times 10^{31} \text{ electrons}$$

$$Q = (9.11 \times 10^{31})(-1.60 \times 10^{-19} \text{C}) = -1.46 \times 10^{13} \text{ C} = -1.46 \times 10^{13} \text{ C}$$

2. HRW6 22.P.023. [52297] How many electrons would have to be removed from a coin to leave it with a charge of  $+1.5 \times 10^{-7} \text{ C}$ ?

Assume the coin is neutral.

$$\text{Number of electrons} = 1.5 \times 10^{-7} \text{ C} / 1.60 \times 10^{-19} \text{C} = 9.38 \times 10^{11} = 9.38 \times 10^{11}$$