

PQ Mass percent

1. An Iron sample is being measured for iron content. The engineer collected a 500g sample and isolated 52g of actual iron. What is the percent mass of iron in the sample?

$$\frac{\text{mass Fe}}{\text{total mass}} \times 100 = \% \quad \frac{52\text{g}}{500\text{g}} \times 100 = 10.4\%$$

2. A 200g pure sample of Copper (II) Oxide is mined and purified.

- a. What is the percent mass of Copper in the sample?

$$\frac{63}{79} \times 100 = 79.7\%$$



- b. What is the percent mass of oxygen in the pure sample?

$$\frac{16}{79} \times 100 = 20.2\%$$

- c. Calculate the mass of copper that can be collected from the sample?

$$200\text{g} \times 0.797 = 159.4\text{g}$$

3. A gold ore sample is found to be 5.7% gold.

- a. If a person analyzed a 100g sample of the gold ore, how much actual gold could be isolate?

$$100\text{g} \times 0.057 = 5.7\text{g Au}$$

- b. If a person needed 50g of gold to fulfill an order by a customer, how much gold ore would be needed?

$$\frac{5.7 \text{ g Au}}{100 \text{ g ore}} = \frac{50}{?}$$

$$? = 50 \cdot 100 / 5.7 = 877 \text{ g ore}$$