MOLES, MOLECULES, AND GRAMS WORKSHEET

Answer the following questions.

1. How many molecules of NaOH weigh 230 grams?

2. How much do 2.3×10^{24} atoms of silver weigh?

3. How many molecules are present in 122 grams of $Cu(NO_3)_2$?

4. How many molecules of FeF_3 weigh 24 grams?

5. How much do 9.4×10^{25} molecules of H_2 weigh?

6. How many molecules are present in 200 grams of CCl_4?

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Answers

1. How many molecules of NaOH weigh 230 grams?

Molar mass of NaOH = 39.997 g/mol

230 grams of NaOH is the weight of 3.4×10^{24} molecules

2. How much do 2.3×10^{24} atoms of silver weigh?

Molar mass of Ag = 107.8 g/mol

2.3×10^{24} Ag atoms weigh 411.65 grams

3. How many molecules are present in 122 grams of $Cu(NO_3)_2$?

Molar mass of $Cu(NO_3)_2$ = 187.57 g/mol

122 grams of $Cu(NO_3)_2$ consist of 3.92×10^{23} molecules

4. How many molecules of FeF_3 weigh 24 grams?

Molar mass of FeF_3 = 112.84 g/mol

24 grams of FeF_3 consist of 2.8×10^{24} molecules

5. How much do 9.4×10^{25} molecules of H_2 weigh?

Molar mass of H_2 = 2.016 g/mol

9.4×10^{25} molecules of H_2 weigh 314.63 grams

6. How many molecules are present in 200 grams of CCl_4?

Molar mass of CCl_4 = 153.82 g/mol

200 grams of CCl_4 consist of 7.83×10^{23} molecules