

Name : Date :



Mole Conversion Worksheet



Answer the following questions.

- ① How much does 0.072 moles of FeCl_3 weigh?

- ② How much does 6.14×10^{25} atoms of gold weigh?

- ③ How many moles are present in 1.2×10^{25} atoms of P?

- ④ How many atoms are present in 0.75 moles of Zn?

- ⑤ How many moles are represented by 2.35 grams of H_2O ?

- ⑥ Find the number of moles present in 452 grams of argon.

- ⑦ How much does 2.6 moles of LiBr weigh?



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Answers

- ① How much does 0.072 moles of FeCl_3 weigh?

Molar mass of $\text{FeCl}_3 = 162.3 \text{ g/mol}$

0.072 moles of FeCl_3 weigh $= 0.072 \times 162.3 \text{ grams} = 11.68 \text{ grams}$

- ② How much does 6.14×10^{25} atoms of gold weigh?

Molar mass of gold $= 196.96 \text{ g/mol}$

6.023×10^{23} atoms weigh 196.96 grams

6.14×10^{25} atoms weigh $196.96 \times [(6.14 \times 10^{25}) / (6.023 \times 10^{23})] = 2 \times 10^4 \text{ grams}$

- ③ How many moles are present in 1.2×10^{25} atoms of P?

Number of moles $= (1.2 \times 10^{25}) / (6.023 \times 10^{23}) = 0.199 \times 10^2 \text{ moles} = 19.9 \text{ moles}$

- ④ How many atoms are present in 0.75 moles of Zn?

Number of atoms $= 0.75 \times 6.023 \times 10^{23} \text{ atoms} = 4.5 \times 10^{23} \text{ atoms}$

- ⑤ How many moles are represented by 2.35 grams of H_2O ?

Molar mass of $\text{H}_2\text{O} = 18 \text{ g/mol}$

Number of moles $= (2.35/18) \text{ moles} = 0.13 \text{ moles}$

- ⑥ Find the number of moles present in 452 grams of argon.

Molar mass of Ar $= 39.948 \text{ g/mol}$

Number of moles $= (452/39.98) \text{ moles} = 11.3 \text{ moles}$

- ⑦ How much does 2.6 moles of LiBr weigh?

Molar mass of LiBr $= 86.845 \text{ g/mol}$

2.6 moles of LiBr weigh $= 2.6 \times 86.845 \text{ grams} = 225.79 \text{ grams}$