Name : _____ Date : _____

Mole Conversion Worksheet

Answer the following questions.

[1] How much does 8.4 moles of iron weigh?

[2] How much does 0.94 moles of sodium bicarbonate weigh?

[3] How many molecules are present in a 168.2 gram sample of CO_2?

[4] How much do 3.47×10^{23} gold atoms weigh?

[5] How many moles represent an 85.2 gram sample of KNO_3?

[6] How many moles represent 0.45 grams of NaOH?

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Mole Conversion Worksheet

Answers

[1] How much does 8.4 moles of iron weigh?

Molar mass of Fe = 55.85 g/mol
8.4 moles of Fe weigh 469.14 grams

[2] How much does 0.94 moles of sodium bicarbonate weigh?

Molar mass of $NaHCO_3$ = 84.007 g/mol
0.94 moles of $NaHCO_3$ = 78.96 grams

[3] How many molecules are present in a 168.2 gram sample of CO_2?

Molar mass of CO_2 = 44.01 g/mol
1 mole of CO_2 , i.e., 6.023×10^{23} molecules of CO_2 weigh 44.01 grams
168.2 grams of CO_2 consist of $(168.2/44.01) \times 6.023 \times 10^{23}$ molecules
$= 2.3 \times 10^{24}$ molecules

[4] How much do 3.47×10^{23} gold atoms weigh?

Molar mass of gold = 196.96 g/mol
6.023×10^{23} gold atoms weigh 196.96 grams
3.47×10^{23} gold atoms weigh 113.47 grams

[5] How many moles represent an 85.2 gram sample of KNO_3?

Molar mass of KNO_3 = 101.1 g/mol
101.1 grams of KNO_3 represent 1 mole
85.2 grams of KNO_3 represent 0.84 moles

[6] How many moles represent 0.45 grams of NaOH?

Molar mass of NaOH = 40 g/mol
0.45 grams of NaOH represent 0.01125 moles