Mole Conversion Worksheet

Answer the following questions.

[1] How many moles are in 72.9 g of HCl?

[2] How many moles are in 79.85 g Fe_2O_3?

[3] How many molecules are in 720 g of $C_6H_{12}O_6$?

[4] How many copper atoms are in 5.6 mole of Cu_2O_3?

[5] How many moles represent 86.84 grams of LiBr?

[6] How many moles of nitrogen are there in 4.3×10^{23} molecules?

Name : _____   Date : _____

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Answers

[1] How many moles are in 72.9 g of HCl?

Molar mass of HCl = 36.46 grams/mol
Number of moles in 72.9 grams = (72.9/36.46) moles = 1.99 moles

[2] How many moles are in 79.85 g Fe_2O_3?

Molar mass of Fe_2O_3 = 159.7 grams/mol
Number of moles in 79.85 grams = (79.85/159.7) moles = 0.5 moles

[3] How many molecules are in 720 g of $C_6H_{12}O_6$?

Molar mass of $C_6H_{12}O_6$ = 180.18 grams/mol
Number of molecules in 720 g of $C_6H_{12}O_6$ = (720/180.18) x 6.023×10^{23} = 24.067×10^{23}
= 2.4067×10^{24}

[4] How many copper atoms are in 5.6 mole of Cu_2O_3?

1 mole of copper contains 6.023×10^{23} atoms
5.6 moles of copper contains 33.7×10^{23} atoms = 3.37×10^{24} atoms

[5] How many moles represent 86.84 grams of LiBr?

Molar mass of LiBr = 86.84 grams/mol
Number of moles present in 86.84 grams of LiBr = (86.84/86.84) moles = 1 mole

[6] How many moles of nitrogen are there in 4.3×10^{23} molecules?

1 mole of nitrogen contains 6.023×10^{23} atoms
Number of moles present in 4.3×10^{23} atoms of nitrogen = $(4.3 \times 10^{23})/(6.023 \times 10^{23})$
= 0.71 moles