

–o Mole Practice Worksheet o–

Answer the following questions.

- 1) How many atoms are in 7.64 moles of barium?
- 2) How many moles of water are represented by 8.33×10^{18} water molecules?
- 3) How many grams does 8.92×10^{24} atoms of tin weigh?
- 4) How many atoms are in 6.28 moles of aluminum?
- 5) How many grams does 0.5 moles of CuBr_2 weigh?
- 6) How many molecules are present in 78.54 g of nitrogen dioxide?

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Answers

1) How many atoms are in 7.64 moles of barium?

1 mole of barium has 6.023×10^{23} atoms

7.64 moles of barium have 46.015×10^{23} atoms $\sim 4.6 \times 10^{24}$ atoms

2) How many moles of water are represented by 8.33×10^{18} water molecules?

6.023×10^{23} water molecules represent 1 mole

8.33×10^{18} water molecules represent 1.38×10^{-5} moles

3) How many grams does 8.92×10^{24} atoms of tin weigh?

Molar mass of tin is 118.71 grams

6.023×10^{23} atoms of tin represent 118.7 grams

8.92×10^{24} atoms of tin represent 1757.93 grams $\sim 1.7 \times 10^3$ grams

4) How many atoms are in 6.28 moles of aluminum?

1 mole of Al represents 6.023×10^{23} atoms

6.28 moles of Al represents 37.8×10^{23} atoms $\sim 3.78 \times 10^{24}$ atoms

5) How many grams does 0.5 moles of CuBr_2 weigh?

1 mole of CuBr_2 weighs 223.37 g/mol

0.5 moles of CuBr_2 weighs 111.685 g/mol

6) How many molecules are present in 78.54 g of nitrogen dioxide?

1 mole of nitrogen dioxide weighs 46 g/mol

46 grams of nitrogen dioxide contain 6.023×10^{23} molecules

78.54 grams of nitrogen dioxide contain 10.28×10^{23} molecules $\sim 1.028 \times 10^{24}$ molecules