

Mole Worksheet

Determine the atomic mass of each of the following:

- 1) Cl 2) N 3) C 4) O

Determine the molar mass of the following:

- 5) H₂O 8) CO₂ 11) NaOH
6) Al₂O₃ 9) Br 12) Sr(NO₃)₂
7) S 10) (NH₄)₂CO₃ 13) Mg

Determine the percent composition of each element in the following:

- 14) CH₃COOH 16) H₃PO₄
15) CaCO₃ 17) (NH₄)₂SO₄

- 18) Which has the larger percent by mass of sulfur: H₂SO₃ or H₂S₂O₈? Show all work and justify your answer.

Convert the following:

- 19) How many grams are in 3.25 moles of H₂SO₄?
20) How many moles are in 25.5 g of Ag?
21) How many moles in 22.6 g of AgNO₃?
22) How many grams are in 4.5 moles of Fe?
23) How many grams are in 0.0435 moles of ZnCl₂?
24) How many grams are in 42.6 mol of Si?

Convert the following:

- 25) How many moles are in 4.50×10^{23} atoms of lead?
26) How many atoms are in 6.22 moles of sodium?
27) How many moles of Sn are in 3.60×10^{24} atoms?
28) How many atoms are in 5.75 moles of aluminum?
29) How many formula units are in 5.23 moles of KBr?
30) How many moles are in 8.17×10^{22} molecules of H₂S?
31) How many moles are in 5.55×10^{23} formula units of NiSO₄?
32) How many molecules are in 8.00 moles of NH₃?

Convert the following:

- 33) How many grams are in 3.62×10^{24} molecules C₆H₁₂O₆?
34) How many molecules are in 25.0 g H₂SO₄?
35) How many grams are in 1.20×10^{24} atoms of Mn?
36) How many formula units are in 500 g PbCl₂?
37) How many molecules are in 125 g C₁₂H₂₂O₁₁?
38) How many grams are in 3.40×10^{22} atoms He?
39) A sample of 3.20×10^{25} atoms of carbon weighs how many milligrams?
40) How many molecules are in 5.49 kg of water?