

15 The mole – Part 1 —Answers

Answers

Work through these after trying the questions yourself.

15.1 6.02×10^{23} particles.

15.2 $6.02 \times 10^{23} \text{ mol}^{-1}$.

15.3 Molecules.

15.4 $N = 3.0 \times 6.02 \times 10^{23} = 1.8 \times 10^{24}$.

15.5 $n = N/N_A = (3.01 \times 10^{23})/(6.02 \times 10^{23}) = 0.50 \text{ mol}$.

15.6 One mole of molecules, and each CO has 3 atoms (1 C + 2 O), so 3 moles of atoms = 1.8×10^{24} atoms.

15.7 Oxygen. Both have one mole of *particles*, but each O₂ molecule has 2 atoms while helium is a single atom —so the oxygen sample has twice as many atoms.