

The Mole and Molar Mass Homework – Student Edition

1. Draw a line between term and its correct definition:

Definitions	Key Terms
1. 6.02×10^{23}	a) Quantitative chemistry
2. The study of how much of a substance reacts	b) Amount (N)
3. The number of moles in a substance	c) Mole
4. The mass of an atom relative to a carbon-12 atom	d) Avogadro's number
5. 6.02×10^{23} particles of a substance	e) gram
6. Atoms having the same number of protons but different numbers of neutrons	f) Isotopes
7. The unit of mass	g) relative atomic mass (A_r)
8. The symbol used to represent Avogadro's number	h) N_0

2. Answer the following questions regarding Avogadro's number and the element carbon-12. Remember to show your working.

a) How many atoms are contained in:

(i) 12g carbon

(ii) 6g carbon

(iii) 1 g carbon

b) How many atoms are contained in:

(i) 0.5 moles of carbon

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(ii) 2 moles of carbon

(iii) 10 moles of carbon

c) If 12g carbon is equal to 1 mole. State how many grams would be found in:

(i) 0.5 moles

(ii) 2 moles

(iii) 10 moles