

Basic Atomic Structure

Name : _____

- 1) Name the element which has the following numbers of particles. Be specific.
(Include charges and mass numbers where possible.)

28 electrons, 34 neutrons, 28 protons _____

63 protons, 90 neutrons _____

10 electrons (neutral atom) _____

50 protons _____

76 electrons, 115 neutrons, 78 protons (charged atom) _____

1 neutron _____

- 2) Write the numbers of protons, electrons, and neutrons for the following elements.
Show calculations for the number of neutrons.

$^{14}\text{N}_7$ Protons _____ Electrons _____ Neutrons _____

$^{24}\text{Mg}_{12}$ Protons _____ Electrons _____ Neutrons _____

$^{59}\text{Co}_{27}$ Protons _____ Electrons _____ Neutrons _____

$^{74}\text{Ge}_{32}$ Protons _____ Electrons _____ Neutrons _____

$^{98}\text{Mo}_{42}$ Protons _____ Electrons _____ Neutrons _____

$^{202}\text{Hg}_{80}$ Protons _____ Electrons _____ Neutrons _____

- 3) Assuming all the atoms have neutral charge, complete the following table using your knowledge on atomic structure.

	Protons	Electrons	Neutrons	Mass number
Atom 1		25	30	
Atom 2			12	24
Atom 3	24		28	
Atom 4		47		107
Atom 5		17	18	
Atom 6			48	84

Basic Atomic Structure

Name: _____

Answers

- 1) Name the element which has the following numbers of particles. Be specific.
(Include charges and mass numbers where possible.)

28 electrons, 34 neutrons, 28 protons Nickel - 62

63 protons, 90 neutrons Europium - 153

10 electrons (neutral atom) Neon

50 protons Tin

76 electrons, 115 neutrons, 78 protons (charged atom) Platinum - 193 (+2) or $^{193}\text{Pt}^{2+}$

1 neutron Deuterium

- 2) Write the numbers of protons, electrons, and neutrons for the following elements.
Show calculations for the number of neutrons.

$^{14}\text{N}_7$ Protons 7 Electrons 7 Neutrons $14 - 7 = 7$

$^{24}\text{Mg}_{12}$ Protons 12 Electrons 12 Neutrons $24 - 12 = 12$

$^{59}\text{Co}_{27}$ Protons 27 Electrons 27 Neutrons $59 - 27 = 32$

$^{74}\text{Ge}_{32}$ Protons 32 Electrons 32 Neutrons $74 - 32 = 42$

$^{98}\text{Mo}_{42}$ Protons 42 Electrons 42 Neutrons $98 - 42 = 56$

$^{202}\text{Hg}_{80}$ Protons 80 Electrons 80 Neutrons $202 - 80 = 122$

- 3) Assuming all the atoms have neutral charge, complete the following table using your knowledge on atomic structure.

	Protons	Electrons	Neutrons	Mass number
Atom 1	25	25	30	55
Atom 2	12	12	12	24
Atom 3	24	24	28	52
Atom 4	47	47	60	107
Atom 5	17	17	18	35
Atom 6	36	36	48	84