

**ISOTOPE WORKSHEET KEY**

Complete the following table.

Symbol of isotope	Number of protons	Number of neutrons	Number of electrons	Atomic number	Mass number
${}^{35}_{17}\text{Cl}$	<b>17</b>	<b>18</b>	<b>17</b>	<b>17</b>	<b>35</b>
${}^{34}_{16}\text{S}$	<b>16</b>	<b>18</b>	<b>16</b>	<b>16</b>	<b>34</b>
${}^{209}_{83}\text{Bi}^{3+}$	83	<b>126</b>	80	<b>83</b>	209
${}^{115}_{49}\text{In}$	49	66	<b>49</b>	<b>49</b>	115
${}^{197}_{79}\text{Au}^{+}$	79	118	78	79	<b>197</b>

**CHEMISTRY 151 - ISOTOPE SYMBOLISM KEY**

Complete the following table.

Symbol	Atomic number	Mass number	Number of protons	Number of neutrons	Number of electrons
${}^{59}_{27}\text{Co}$	<b>27</b>	<b>59</b>	<b>27</b>	<b>32</b>	<b>27</b>
${}^{27}_{12}\text{Mg}^{2+}$	<b>12</b>	<b>27</b>	<b>12</b>	<b>15</b>	<b>10</b>
${}^{31}_{15}\text{P}^{3-}$	<b>15</b>	<b>31</b>	<b>15</b>	<b>16</b>	<b>18</b>
${}^{190}_{76}\text{Os}$	76	190	<b>76</b>	<b>114</b>	76
${}^{238}_{92}\text{U}$	<b>92</b>	<b>238</b>	92	146	92
${}^{45}_{21}\text{Sc}^{3+}$	<b>21</b>	45	21	<b>24</b>	18

**CHEMISTRY 151 - ATOMIC MASSES KEY**

Naturally occurring iron consists of 5.82% iron-54 with atoms of mass 53.940 u, 91.66% iron-56 with atoms of mass 55.935 u, 2.19% iron-57 with atoms of mass 56.935 u, and 0.33% iron-58 with atoms of mass 57.933 u. Calculate iron's atomic mass.

$$\begin{aligned} \text{atomic mass} &= 0.0582(53.940) + 0.9166(55.935) + 0.0219(56.935) + 0.0033(57.933) \\ &= 3.14 + 51.27 + 1.25 + 0.19 = \mathbf{55.85 \text{ u}} \end{aligned}$$