

## Isotopes and Atomic Weight

In the pairs of elements below, determine whether the pair is different elements or isotopes. Show your work and indicate your answer in the space provided.

Elements	Explanation/answer
Element D has 6 protons and 7 neutrons Element R has 7 protons and 7 neutrons	
Element J has 27 protons and 32 neutrons Element L has 27 protons and 33 neutrons	
Element X has 17 protons and 18 neutrons Element Y has 18 protons and 17 neutrons	
Element Q has 56 protons and 81 neutrons Element E has 56 protons and 82 neutrons	
Element T has 20 protons and 40 neutrons Element G has 20 protons and 41 neutrons	
Element H has 8 protons and 8 neutrons Element M has 7 protons and 8 neutrons	
Element Z has 92 protons and 238 neutrons Element QQ has 92 protons and 143 neutrons	

1) Fill in the blanks of the table below

element		isotope A			isotope B	
Symbol	atomic mass	atomic mass	% abund	atomic mass	% abund	
<b>A</b> <i>Li</i>	6.942	6.015	7.42	7.016		
<b>b</b> B	10.811	10.013		11.009		
<b>C</b> <i>Ga</i>	69.723	68.926	<b>60.10</b>	70.925	<b>39.90</b>	

Use this data to find the weighted atomic mass of Sr: Sr-84, 0.56%; Sr-86, 9.86%; Sr-87, 7.02%; Sr-88, 82.56%

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Elements	Explanation/answer
Element D has 6 protons and 7 neutrons Element R has 7 protons and 7 neutrons	<i>These are different atoms. Isotopes have the same number of protons but different number of neutrons.</i>
Element J has 27 protons and 32 neutrons Element L has 27 protons and 33 neutrons	<i>These are isotopes because they have the same number of protons but different number of electrons.</i>
Element X has 17 protons and 18 neutrons Element Y has 18 protons and 17 neutrons	<i>These are different atoms. Isotopes have the same number of protons but different number of neutrons.</i>
Element Q has 56 protons and 81 neutrons Element E has 56 protons and 82 neutrons	<i>These are isotopes because they have the same number of protons but different number of electrons.</i>
Element T has 20 protons and 40 neutrons Element G has 20 protons and 41 neutrons	<i>These are isotopes because they have the same number of protons but different number of electrons.</i>
Element H has 8 protons and 8 neutrons Element M has 7 protons and 8 neutrons	<i>These are different atoms. Isotopes have the same number of protons but different number of neutrons.</i>
Element Z has 92 protons and 238 neutrons Element QQ has 92 protons and 143 neutrons	<i>These are isotopes because they have the same number of protons but different number of electrons.</i>

2) Fill in the blanks of the table below

element		isotope A			isotope B	
Symbol	atomic mass	atomic mass	% abund	atomic mass	% abund	
<b>A</b> <i>Li</i>	6.942	6.015	7.42	7.016	<b>92.58</b>	
<b>b</b> B	10.811	10.013	<b>92.62</b>	11.009	<b>7.38</b>	
<b>C</b> <b>Ga</b>	69.723	68.926	<b>60.10</b>	70.925	<b>39.90</b>	