

ISOTOPES OR DIFFERENT ELEMENTS WORKSHEET

A. Use the information about each element to determine if the pair of elements are isotopes or different elements.

1. Element D has 6 protons and 7 neutrons.

Element F has 7 protons and 7 neutrons.

2. Element J has 27 protons and 32 neutrons.

Element L has 27 protons and 33 neutrons.

3. Element X has 17 protons and 18 neutrons.

Element Y has 18 protons and 17 neutrons.

4. Element Q has 56 protons and 81 neutrons.

Element F has 56 protons and 82 neutrons.

5. Element T has an atomic number 20 and a mass number 40.

Element Z has an atomic number 20 and a mass number 41.

6. Element P has an atomic number 92 and a mass number 238.

Element S has 92 protons and 143 neutrons.

B. Write the most common isotope in hyphen notation for the following elements.

1. Sodium _____

2. Aluminium _____

3. Arsenic _____

4. Radon _____

5. Carbon _____

6. Cesium _____

C. Write the most common isotope in nuclear symbol notation in the following elements.

1. Uranium _____

2. Plutonium _____

3. Fluorine _____

4. Zinc _____

5. Iodine _____

6. Hydrogen _____

D. Calculate the number of protons and neutrons in the following isotopes.

H - 3 Number of protons _____

Number of neutrons _____

C - 14 Number of protons _____

Number of neutrons _____

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1. Element D has 6 protons and 7 neutrons.

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Different elements

2. Element J has 27 protons and 32 neutrons.

Element L has 27 protons and 33 neutrons.

Isotopes

3. Element X has 17 protons and 18 neutrons.

Element Y has 18 protons and 17 neutrons.

Different elements

4. Element Q has 56 protons and 81 neutrons.

Element F has 56 protons and 82 neutrons.

Isotopes

5. Element T has an atomic number 20 and a mass number 40.

Element Z has an atomic number 20 and a mass number 41.

Isotopes

6. Element P has an atomic number 92 and a mass number 238.

Element S has 92 protons and 143 neutrons.

Isotopes

B. Write the most common isotope in hyphen notation for the following elements.

1. Sodium Na - 23

2. Aluminium Al - 27

3. Arsenic As - 75

4. Radon Rn - 222

5. Carbon C - 12

6. Cesium Cs - 133

C. Write the most common isotope in nuclear symbol notation in the following elements.

1. Uranium ${}^{238}_{92}\text{U}$

2. Plutonium ${}^{244}_{94}\text{Pu}$

3. Fluorine ${}^{19}_9\text{F}$

4. Zinc ${}^{65}_{30}\text{Zn}$

5. Iodine ${}^{127}_{53}\text{I}$

6. Hydrogen ${}^1_1\text{H}$

D. Calculate the number of protons and neutrons in the following isotopes.

H - 3 Number of protons 1

Number of neutrons 2

C - 14 Number of protons 6

Number of neutrons 8