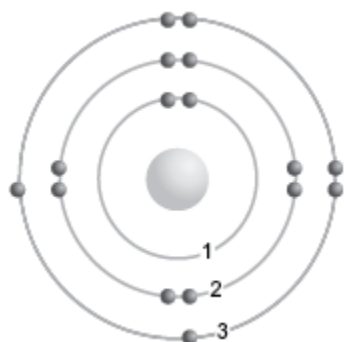
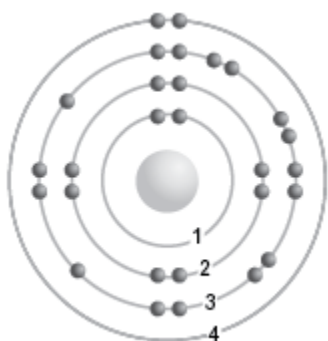


Select the Bohr model that represents the electron configuration of nickel.

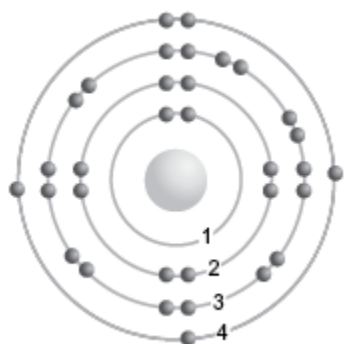
☐ A.



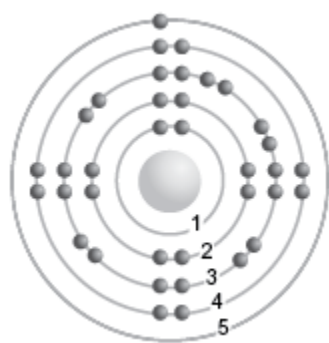
☒ B.



☐ C.



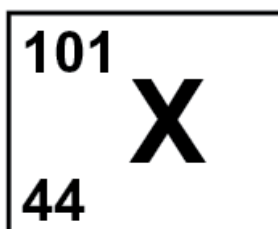
☐ D.



Based on the relative positions of atoms in the periodic table, which pair of elements most likely has the largest difference in atomic radius?

- ☐ A. N, O
- ☐ B. Rf, Sg
- ☐ C. Pb, Po
- ☒ D. Mg, Ra

The model shows values corresponding to a mystery element, element "X", on the periodic table. Choose the correct terms to complete the sentences.



The atomic number is the total amount of protons in the nucleus of an atom, which is represented by the number 44 in the model. The mass number is the total amount of protons and neutrons in the nucleus of an atom, which is represented by the number 101 in the model.

Order the following atoms from highest to lowest number of protons.

Tin - 2
 gallium - 3
 barium - 1
 potassium - 4
 aluminum - 5

Place the elements in order from the element with the most electrons to the element with the least number of electrons.

Ar - 3
 Se - 1
 Ca - 2
 H - 4

Choose the correct terms to complete the sentences.

Oxygen-16, oxygen-17, and oxygen-18 are the three isotopes of the element oxygen. An atom of each of these isotopes will have the same number of **protons**, but a different number of **neutrons**.

Estimate the atomic mass of silicon based on the following information:

The natural abundance of Si-28 is 92.23%. For Si-29, it is 4.67%, and for Si-30, it is 3.10%.

- ☐ A. 25.8 amu
- ☒ B. 28.1 amu
- ☐ C. 29.0 amu
- ☐ D. 87.0 amu

What is the wavelength of a light wave with a frequency of 2.5×10^{14} Hz?

- ☐ A. 7.5×10^{-6} m
- ☒ B. 1.2×10^{-6} m
- ☐ C. 1.2×10^{-5} m
- ☐ D. 8.3×10^5 m

What causes the unique atomic spectra produced for each element?

- ☐ A. Atoms emit light as electrons jump up to higher energy levels.
- ☒ B. Atoms emit light as excited electrons drop down to lower energy levels.
- ☐ C. Atoms emit light as protons jump up to higher energy levels.
- ☐ D. Atoms emit light as excited protons drop down to lower energy levels.

What is the maximum number of electrons in the fourth energy level?

- ☒ A. 32 electrons
- ☐ B. 18 electrons
- ☐ C. 6 electrons
- ☐ D. 2 electrons