

## Drawing Bohr Diagrams

### Example 1

Draw a Bohr diagram of a single fluorine atom.  ${}^{19}_{9}\text{F}$

#### Step 1

Determine the number of subatomic particles in the atom.

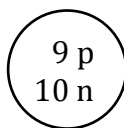
Number of Protons = Atomic Number \_\_\_\_\_

Number of Electrons = Atomic Number \_\_\_\_\_

Number of Neutrons = Mass Number – Atomic Number \_\_\_\_\_

#### Step 2

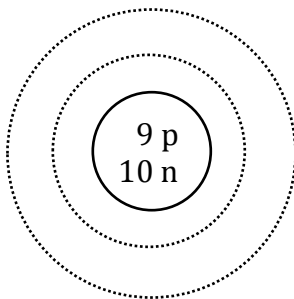
Draw a circle to represent the nucleus. Inside the circle, label the number of protons and neutrons.



#### Step 3

Draw the correct number of orbits. (**Note:** The number of orbits is equal to the row the element is in on the periodic table.)

Since fluorine is in the second row, it has two orbits.

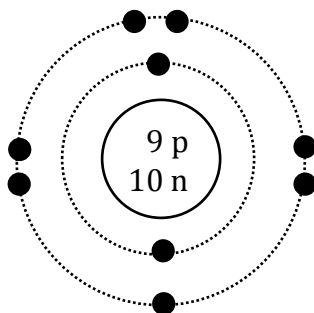


#### Step 4

Draw the electrons as dots on the orbits.

- start by placing electrons on the innermost orbit first
- once an orbit is full, move to the next orbit (work your way out from the center)
- each orbit can hold a maximum amount of electrons:
  - first orbit can hold 2 electrons
  - second orbit can hold 8 electrons
  - third orbit can hold 8 electrons

Fluorine should have 9 electrons. The first orbit will hold 2 (the maximum it can hold) and the remaining 7 will go in the second orbit.



#### Example 2

Draw a Bohr diagram of a single atom of magnesium.  ${}_{12}^{24}\text{Mg}$

#### Homework

Draw Bohr diagrams for the first 18 elements on the periodic table (Atomic numbers 1 to 18).