Electron Arrangement and The Periodic Table

1. Write the electron arrangements of the following atoms:
   - Neon
   - Calcium
   - Hydrogen
   - Sodium
   - Titanium
   - Gold
   - Bromine
   - Sulfur
   - Cerium
   - Krypton
   - Ruthenium
   - Carbon

2. Place the highest occupied sublevel with number of electrons (4s\(^1\), 3d\(^7\), 5p\(^4\), etc.) of the above elements in their position on the blank periodic table.
3. Based on the electron arrangements and their locations on the table, where are all of the elements with the highest occupied sublevel that is a(n)... 
   a. s? Shade with a red colored pencil.
   
   b. p? Shade with a blue colored pencil.
   
   c. d? Shade with a green colored pencil.
   
   d. f? Shade with a yellow colored pencil.

4. Look at the top three rows of the periodic table. What does the location of an element tell you about the highest occupied energy level?

5. Look at the columns of the periodic table. What does the location of an element tell you about the number of electrons in the highest occupied sublevel?

6. Using only its location on the periodic table, determine the highest occupied sublevel with number of electrons (4s\(^1\), 3d\(^7\), 5p\(^4\), etc.) for the following elements:
   a. Boron
   
   b. Cesium
   
   c. Arsenic
   
   d. Zinc

7. Based on its electron arrangement, where should He be placed?