1. Calculate the frequency of light with a wavelength of 589 nm.

2. Find the energy of a photon with a wavelength of 175 nm.

3. The work function for gold is 8.2 x 10-19 J.

 a. What is the minimum frequency needed to eject an electron from gold?

 b. What would be the kinetic energy of an electron ejected by light with a frequency of 2.50 x 1015 Hz?

 c. What would the electron's velocity be?

4. Use Bohr's model to calculate the energy of a photon emitted when an electron in a hydrogen atom jumps from energy level 6 down to energy level 2. Find the wavelength, frequency, and momentum of the photon.

5. If an electron in an atom is moving at a velocity of 7.5 x 105 m/s, calculate the wavelength of the electron. Find the radius of the first three orbits of that atom.

6. The electron above has an uncertainty of 5% on the measurement of its velocity. What is the uncertainty of position of the electron? Express the value in terms of atomic diameters (assume the diameter of the level 1 orbit in the ground state).