

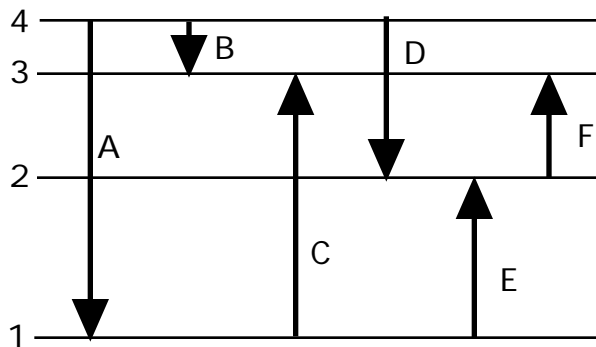
EMR Production

Name _____



- 1) Label the wavelength on the depiction of a light wave above.
- 2) If the wavelength is 500 nm what is the frequency? _____
- 3) What type of EMR is represented by the wave from question #2? _____.
- 4) How would an x-ray differ in frequency, wavelength and energy from an ultraviolet wave?

The quantum level occupied by an electron depends upon its energy. If an electron absorbs energy it can jump to a higher quantum level (or energy level). Below is a depiction of the four lowest energy levels of an atom. The arrows represent an electron jumping from one energy level to another.



- 5) Which of the lettered changes above depicts an electron absorbing energy? (more than one answer) _____
- 6) Of the three instances where an electron is emitting energy one results in yellow light, one in infrared light, and one in ultraviolet light. Which letter is associated with each wavelength? Explain your reasoning.
- 7) List two ways that you can excite an electron (cause it to absorb energy).