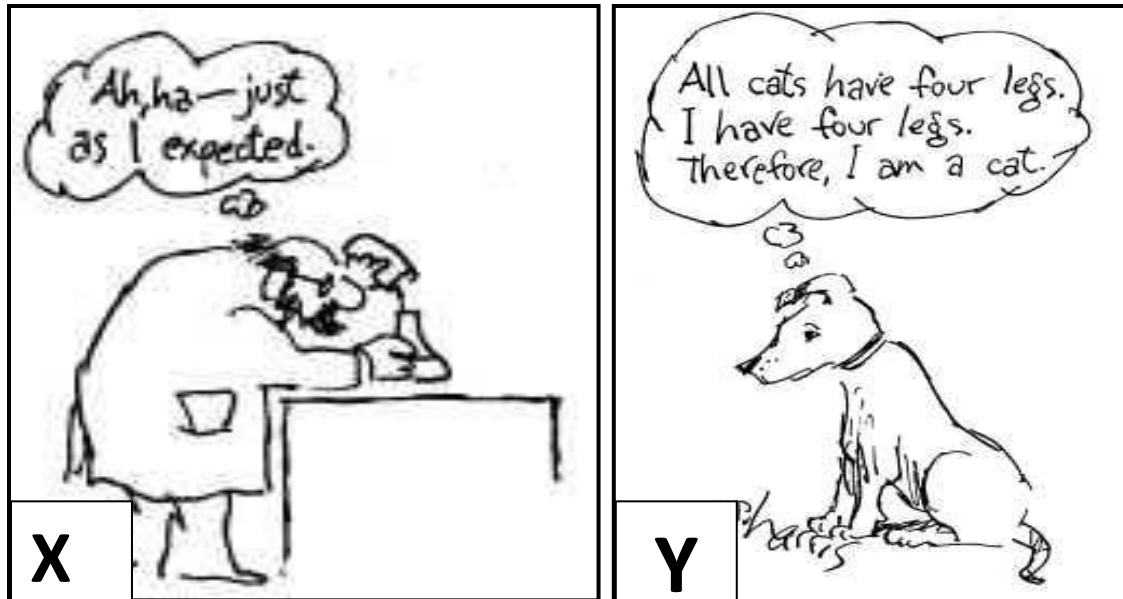


Q1. Here are two cartoons. Select the proper description of what the cartoons are illustrating:

- a) X is illustrating **deductive** reasoning and Y is illustrating **inductive** reasoning.
- b) X is illustrating a **scientist testing a prediction** and Y is illustrating **deductive** reasoning.
- c) X is illustrating a **scientific experiment** and Y is illustrating **inductive** reasoning.

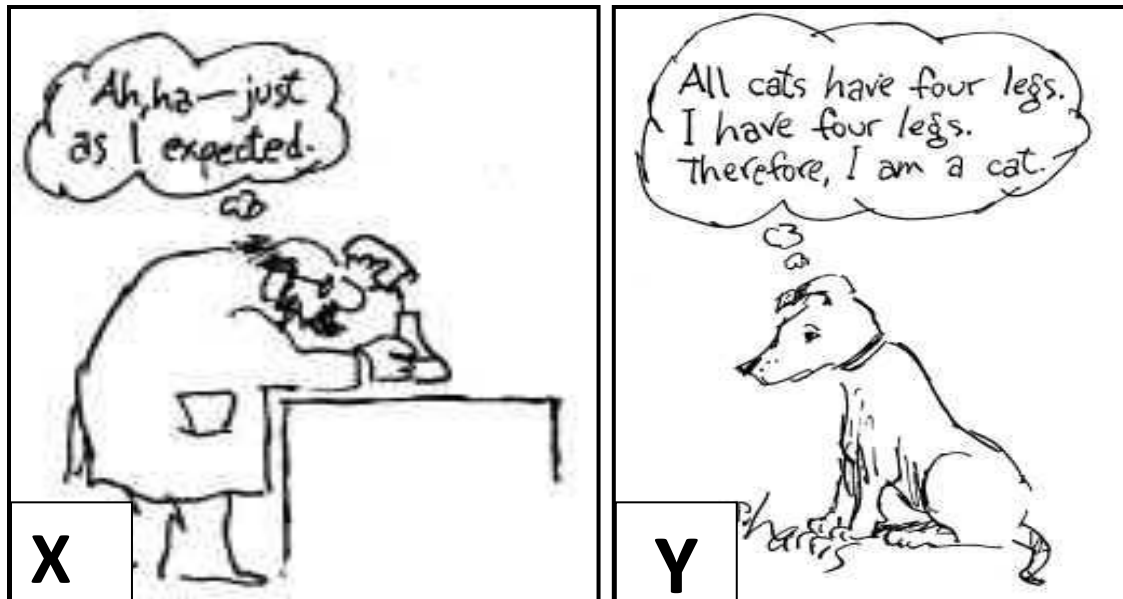


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#2. Here are three views from “The Powers of 10” video. Each represents the distance in meters above the hand of the person in view A. Use your understanding of powers of ten to select the one **CORRECT** statement:

- a) View A is 10 meters above the person’s hand
- b) View B is 100 meters above the person’s hand
- c) View C is twice as far away as View B

A



1×10^0 meters

B



1×10^2 meters

C



1×10^4 meters

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C

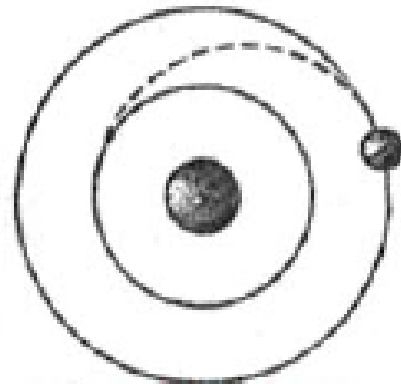


1×10^4 meters

#6. In an atom, an electron can make a **quantum leap** from a **LOWER** energy state to a **HIGHER** energy state when _____

Hint: read each word carefully!

- a) A **photon** of electromagnetic energy is absorbed by the electron
- b) a **photon** of electromagnetic energy is released by an electron.
- c) a **proton** of electromagnetic energy is absorbed by the electron.



*electron leaps
to excited state*

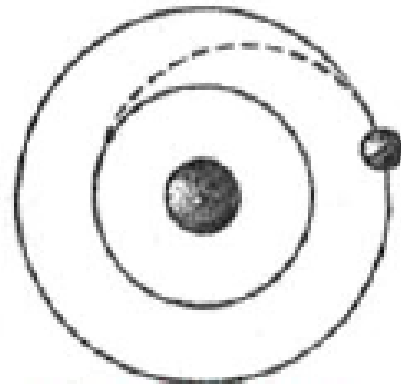
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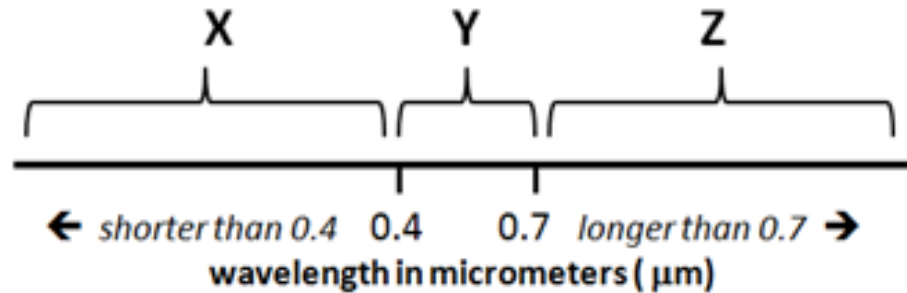
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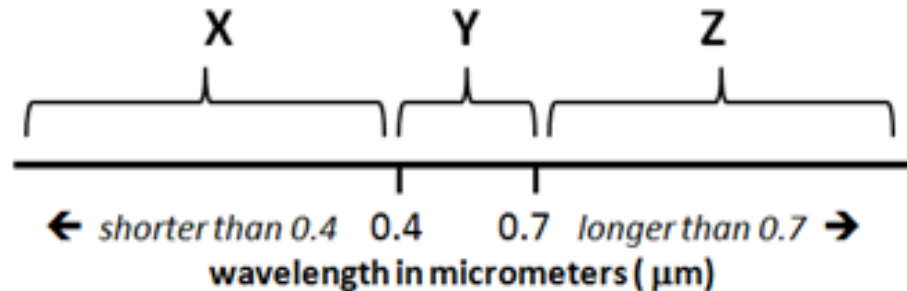
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#8. This figure represents a portion of the **Electromagnetic Spectrum** with wavelengths shown (in micrometers, μm) along a horizontal line with sections of the spectrum bracketed and labeled X, Y and Z. **Select the statement below that is a correct description of what the bracketed sections X, Y and Z represent:**



- a) Section X represents **infrared** wavelengths, Section Y represents **visible light** wavelengths, and Section Z represents **ultraviolet** wavelengths.
- b) Sections X & Y represent wavelengths of electromagnetic energy that are produced by the **chaotic kinetic motion of molecules** and Section Z represents wavelengths of electromagnetic energy that are produced by **electrons** moving within individual **atoms**.
- c) Sections X & Y represent wavelengths that have a **higher** frequency and energy than the wavelengths of Section Z

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