



Modern Physics / Set 1 / Animation 4

Name _____ Class _____

<Show all work on calculations. Include proper units. Explanations require complete sentences.>

- 1) For each electron in each level they start in, state if a photon is absorbed, emitted or neither.

Level the e- starts in

n = 1 _____

n = 2 _____

n = 3 _____

n = 4 _____

- 2) Determine the energy, frequency and wavelength of the photon that bombards the electron in the n=2 level.

_____ eV

_____ Hz

_____ m

- 3) Determine the energy of the black photon in eV's and Joules.

_____ eV

_____ J

- 4) In what part of the electromagnetic spectrum does this black photon fall and why is the black used to represent it?

5) Explain why the purple photon does not affect the electron in the $n=1$ level.

6) If an electron in the $n=4$ level were bombarded by the same purple photon would it be excited to the $n=5$ level? (explain)