

hhh.schaums.43.9_43.12

9. Divide 1240 by 821

10. Recall that the longer the wavelength the lower the energy, so the two lowest energy wavelengths (longest wavelengths) come from the transitions from $n = 3$ to $n = 1$ and from $n = 2$ to $n = 1$

See page 407 for the formulas for the Lyman, Balmer, and Paschen series

MEMORIZE THAT THE GROUND STATE ENERGY OF THE HYDROGEN ATOM IS -13.6 EV. THE NEGATIVE SIGN BY VIRTUE OF THE FACT THAT YOU MUST ADD ENERGY TO IONIZE IT (AT WHICH POINT ITS ENERGY IS ZERO)

11. Look at 43.3

12 See page 406. The energy level for ionizing one lithium electron. becomes

$$E_n = -\frac{13.6Z^2}{n^2}eV$$

where Z is the atomic number (the number of protons) which you can find in an appendix at the back of the book

The atomic mass number is the number of nucleons (protons and neutrons and is always more massive that the atomic number)