Look at problem soln for 38-29 to see diagram for Neon.

\[ \Delta E = E_{5s} - E_{3p} = 20.66\text{eV} - 18.70\text{eV} = 1.96\text{eV} = \frac{1.96\text{eV}}{1.602\times10^{-19}\text{J}} \]

\[ \Delta E_{\text{photon}} = h \nu = \frac{hc}{\lambda} \Rightarrow \lambda = \frac{hc}{\Delta E_{\text{photon}}} \]

\[ \lambda = \frac{(6.626\times10^{-34}\text{J}\cdot\text{s})(3\times10^8\text{m/s})}{1.96\times10^{-19}\text{J}} = 633\text{nm} \]

Which is the main He-Ne laser line

(to be more precise need to use constants to more decimal places)