Drill 36: three different types of problems

$E = -2.18 \times 10^{-18}\ J \left(1/n^2_f - 1/n^2_i\right)$ note: change is positive

$E = h\nu$ $h = 6.626 \times 10^{-34}\ Js$

$c = \lambda\nu$ $c = 3.00 \times 10^{8}\ m/s$

Drill 37:

$\lambda = h / (mv)$

$m = 1.67 \times 10^{-27}$ kg for proton or neutron

$m = 9.11 \times 10^{-31}$ kg for electron

must use kg since $J = kgm^2/s^2$

25% of speed of light ($.25 \times 3.00 \times 10^{8}$ m/s) = 7.50×10^{7} m/s