

4.11) The amplitude $|\psi|$ of the wave doubles, and since the probability of detecting electrons involves squaring the amplitude, there will be $2^2 = 4$ times as many electrons.

$$4 \cdot 10 \text{ e}^-/\text{s} = \boxed{40 \text{ e}^-/\text{s}}$$

4.15) $p = \frac{h}{\lambda}$ $u = \frac{p}{m} \Rightarrow u = \frac{h}{m\lambda}$

$$u = \frac{6.626 \cdot 10^{-34} \text{ J}\cdot\text{s}}{(9.11 \cdot 10^{-31} \text{ kg})(10^{-6} \text{ m})} = \boxed{728 \text{ m/s}}$$