



Do part b first:

Conserve energy:

$$\Delta E_{\text{mech}} = \Delta K + \Delta U = 0$$

$$(K_f - K_i) + q\Delta V = 0$$

$$-\frac{1}{2}mv_i^2 - e\Delta V = 0$$

$$\Delta V = -\frac{mv_i^2}{2e} = -0.7117 \text{ V}$$

Now,

$$\Delta V = V_f - V_i < 0$$

∴ electron is moving from high to low potential.