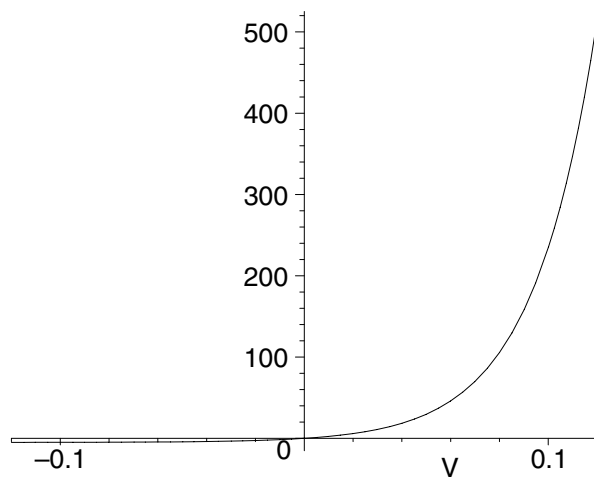


44. (a) The vertical axis in the graph below is the current in nanoamperes:



- (b) The ratio is

$$\frac{i|_{v=+0.50 \text{ V}}}{i|_{v=-0.50 \text{ V}}} = \frac{i_0 [e^{+0.50 \text{ eV}/[(8.62 \times 10^{-5} \text{ eV/K})(300 \text{ K})]} - 1]}{i_0 [e^{-0.50 \text{ eV}/[(8.62 \times 10^{-5} \text{ eV/K})(300 \text{ K})]} - 1]} = 2.5 \times 10^8 .$$