$$ma = mg - bv^2$$

$$a = g - \frac{b}{m}v^2$$

$$v_0 = 3000\frac{м}{c}; v_1 = 1500\frac{м}{c}$$

$$\begin{cases} \frac{b}{m}{v_0}^2 = \frac{0{,}001*3000^2}{1} = 9000 >> g \\ \frac{b}{m}{v_1}^2 = \frac{0{,}001*1500^2}{1} = 2250 >> g \end{cases} \Rightarrow a = \frac{dv}{dt} = g - \frac{b}{m}v^2 \approx -\frac{b}{m}v^2$$

$$v` = -\frac{b}{m}v^2$$

$$\frac{dv}{v^2} = dt\left(-\frac{b}{m}\right)$$

$$-\frac{1}{v} = t\left(-\frac{b}{m}\right) + c = t\left(-\frac{b}{m}\right) - \frac{1}{v_0}$$

$$v = \frac{dx}{dt} = \frac{1}{\frac{b*t}{m} + \frac{1}{v_0}} = \frac{m}{b} * \frac{1}{t + \frac{m}{b*v_0}}$$

$$v = \frac{v_0}{2} \; npu \; t = t_1 = \frac{m}{b*v_0}$$

$$x = \int_{t=0}^{t_1} v dt = \frac{m}{b}\ln\left(t + \frac{m}{b*v_0}\right)\Big|_{t=0}^{\frac{m}{b*v_0}} = \frac{m}{b}\left[\ln\left(\frac{m}{b*v_0} + \frac{m}{b*v_0}\right) - \ln\left(0 + \frac{m}{b*v_0}\right)\right] = \frac{m}{b} * \ln(2) = \frac{1}{0{,}001} * \ln(2) м \approx 693 м$$