Find the adiabatic temperature rise for the following reaction:

$$2A = R$$

Data:

$$\Delta H_r = \Delta H_{f_R} - 2\Delta H_{f_A} = -100,000 \text{ (cal)}$$

$$\rho C_p = 800 \text{ (cal/L °C)}$$

$$C_{A0} = 1.0 \text{ (mol/L)}$$

$$x_A = 0.9$$