Heating of a fuel in an engine

Consider the fact that after combustion the octane fuel has been converted into CO_2 and H_2O in the vapor phase. Assuming an average value of c_p = 33 J/mol-K for vapor produced by combustion, what is the final temperature if 12 microliters of octane are combusted? (ρ_{oct} = 0.7 gm/cm^3)