Problem 450C

Recalling that the rate of dissipation of energy in a streamtube is given by the total pressure drop multiplied by the volume flow rate, find the rate of energy dissipation (in HP where $1\ HP = 746\ kg\ m^2/s^3$) in a hydraulic jump where the depth upstream is $1m$, the depth downstream is $5m$ and the breadth of the jump is $15m$. Assume $g = 9.8m/s^2$ and the water density, $\rho = 1000kg/m^3$.