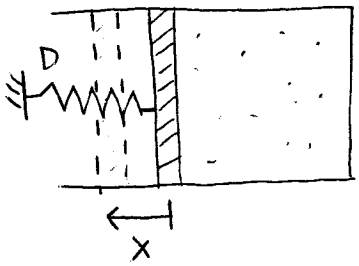
5.) $p_1 = 100\,kPa$ $T_1 = 300K$ $A = 100\,cm^2$

$V_1 = 1\,\ell$ $p_0 = 100\,kPa$

$D = 5\,kN/m$ $T_2 = 600K$ $p_2 = ?$



$\boxed{pV = nRT}$ $\boxed{F_r = -Dx}$

$V_2 = V_1 + Ax$ $p_1 = p_0$

dugó: $F_e = 0 = p_2 A - p_0 A - Dx \rightarrow p_2 = p_0 + \frac{Dx}{A}$.

$pV = nRT \rightarrow \frac{pV}{T} = áll$

$\frac{p_1 V_1}{T_1} = \frac{p_2 V_2}{T_2} \rightarrow T_2 p_1 V_1 = T_1 p_2 V_2$

$T_2 p_0 V_1 = T_1 \left(p_0 + \frac{Dx}{A}\right)(V_1 + Ax)$

$\Downarrow$

$\underline{\underline{x}} \rightarrow \underline{\underline{p_2}}$