Question 24705

Container has weight $W = 14700\,N$. The difference in velocities (hence in kinetic energies) is caused by work, done by friction force. Hence, $A_{friction} = -\Delta E = \frac{-m}{2}(v_2^2 - v_1^2)$. One knows, that friction force is $F_{friction} = \mu W$, where μ is friction coefficient and $A = F \cdot s$. Combining last three formulas, obtain $\mu W s = \frac{-m}{2}(v_2^2 - v_1^2)$, from where obtain $v_2 = \sqrt{v_1^2 - \frac{2\mu W s}{m}}$. In order to calculate final speed, friction coefficient is needed.