Homework No. 2

Determine the temperature distribution in the two-layer structure (wall).
Consider one – dimensional heat transfer (steady state).
Discretize the structure by 1D elements with linear approximation functions.
Temperatures on the surfaces T_1 and T_2 will be checked.
The temperature T_{12} between the layer will be checked, too.
External temperature is T_e = -18˚C with the transfer coefficient α_e = 30 $Wm^{-2}K^{-1}$,
Internal temperature is T_i = 21˚C with the transfer coefficient α_i = 15 $Wm^{-2}K^{-1}$.

Parameters of the first layer:

λ_1 = 0.4 $Wm^{-1}K^{-1}$

Parameters of the second layer:

λ_2 = 1.5 $Wm^{-1}K^{-1}$