

**Problema 6.2**

Pct.	Soluție <i>"Țiglă metalică"</i>	Punctaj parțial	Punctaj Total
a)	$L = 205 \text{ cm} = 2,05 \text{ m}$ $\ell_1 = 85 \text{ cm} = 0,85 \text{ m}$ $S = L \cdot \ell_1$ $S = 205 \text{ cm} \cdot 85 \text{ cm} = 17425 \text{ cm}^2 = 1,7425 \text{ m}^2$ $S = 17425 \text{ cm}^2 = 1,7425 \text{ m}^2$	<p align="center">1,0p</p> <p align="center">1,0p</p> <p align="center">1,0p</p>	<p align="center">3p</p>
b)	<p><b>Aria suprafețelor verticale este:</b></p> $S_l = 10 \cdot 5 \text{ cm} \cdot 205 \text{ cm} = 10250 \text{ cm}^2 = 1,0250 \text{ m}^2$ $S_1 = S + S_l = 1,7425 \text{ m}^2 + 1,0250 \text{ m}^2 = 2,7675 \text{ m}^2$ $\sigma = \frac{m}{S_1} \Rightarrow m = \sigma \cdot S_1$ $m = 8 \frac{\text{kg}}{\text{m}^2} \cdot 2,7675 \text{ m}^2 = 22,14 \text{ m}^2$ $m = 22,14 \text{ m}^2$	<p align="center">1,0p</p> <p align="center">1,0p</p> <p align="center">1,0p</p>	<p align="center">3p</p>
c)	$\ell_{01} = 1 \text{ m} \dots \dots \dots \frac{\Delta \ell_1}{\Delta t_1} = \frac{3 \text{ mm}}{100^\circ \text{C}} = 0,03 \frac{\text{mm}}{^\circ \text{C}}$ $L = 2,05 \text{ m} \dots \dots \dots \frac{\Delta L}{\Delta t}$ $\frac{\ell_{01}}{L} = \frac{\frac{\Delta \ell_1}{\Delta t_1}}{\frac{\Delta L}{\Delta t}} = \frac{\Delta \ell_1 \cdot \Delta t}{\Delta L \cdot \Delta t_1}$ $\Delta L = L \cdot \frac{\Delta \ell_1 \cdot \Delta t}{\ell_{01} \cdot \Delta t_1} = 2,05 \text{ m} \cdot \frac{3 \text{ mm} \cdot 40^\circ \text{C}}{1 \text{ m} \cdot 100^\circ \text{C}} = 2,46 \text{ mm} = 0,246 \text{ cm}$ $L' = L + \Delta L = 205 \text{ cm} + 0,246 \text{ cm} = 205,246 \text{ cm}$ $\ell_{01} = 1 \text{ m} \dots \dots \dots \frac{\Delta \ell_1}{\Delta t_1} = \frac{3 \text{ mm}}{100^\circ \text{C}} = 0,03 \frac{\text{mm}}{^\circ \text{C}}$ $\ell = 0,85 \text{ m} \dots \dots \dots \frac{\Delta \ell}{\Delta t}$ $\frac{\ell_{01}}{\ell} = \frac{\frac{\Delta \ell_1}{\Delta t_1}}{\frac{\Delta \ell}{\Delta t}} = \frac{\Delta \ell_1 \cdot \Delta t}{\Delta \ell \cdot \Delta t_1}$ $\Delta \ell = \ell \cdot \frac{\Delta \ell_1 \cdot \Delta t}{\ell_{01} \cdot \Delta t_1} = 0,85 \text{ m} \cdot \frac{3 \text{ mm} \cdot 40^\circ \text{C}}{1 \text{ m} \cdot 100^\circ \text{C}} = 1,02 \text{ mm} = 0,102 \text{ cm}$ $\ell' = \ell + \Delta \ell = 85 \text{ cm} + 0,102 \text{ cm} = 85,102 \text{ cm}$ $S' = L' \cdot \ell' = 205,246 \text{ cm} \cdot 85,102 \text{ cm} \approx 17466,8 \text{ cm}^2$ $S = 17425 \text{ cm}^2 \dots \dots \dots 100\%$ $S' - S = 17466,8 \text{ cm}^2 - 17425 \text{ cm}^2 = 41,8 \text{ cm}^2 \dots \dots \dots w$ $w = \frac{S' - S}{S} 100\% \approx 0,24 \%$ $w = 0,24 \%$	<p align="center">1,0p</p> <p align="center">1,0p</p> <p align="center">1,0p</p>	<p align="center">4p</p>
			<p align="center">10p</p>