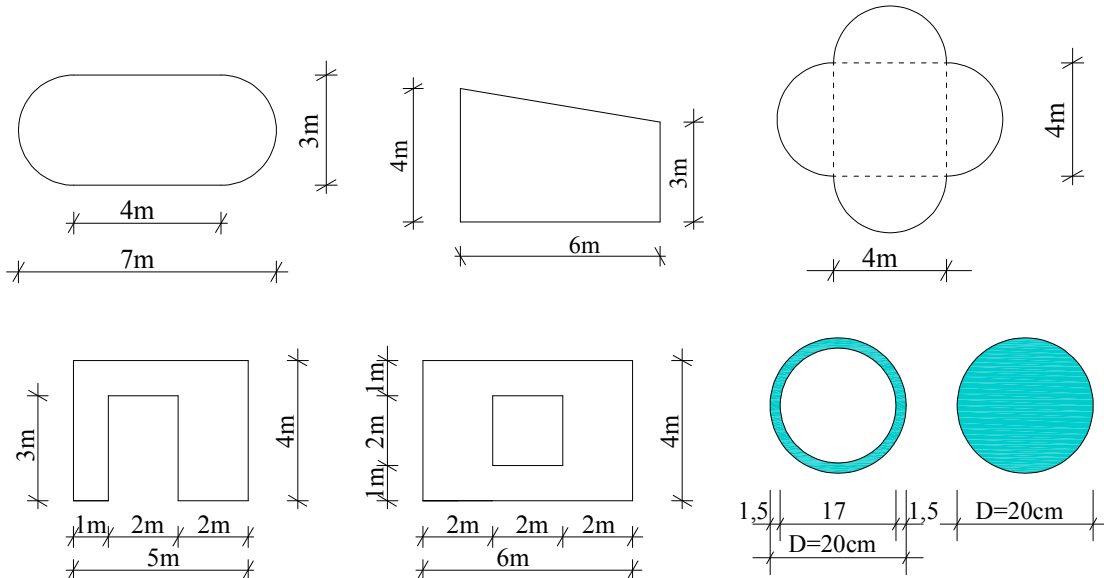


Practice exercise to Blackboard exercise No 1

1) Change these units:

	ρ [g/cm ³]	ρ [kg/m ³]	γ [N/m ³]	γ [kN/m ³]
water	1,00			
concrete				22,0
brick			12000	
pine				5,0
aluminium	2,7			
steel				78,5
EPS			100	

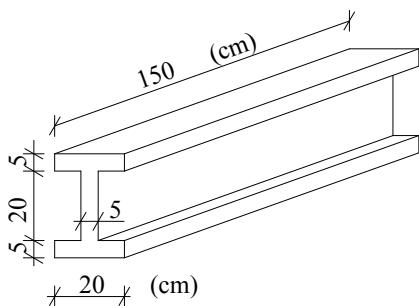
2) Calculate the areas of the following object:



3) Determine the specific weight, the weight per unit length and the total weight of the following element! Use the following units: kN/m³, kN/m, kN

Timber "I" beam:

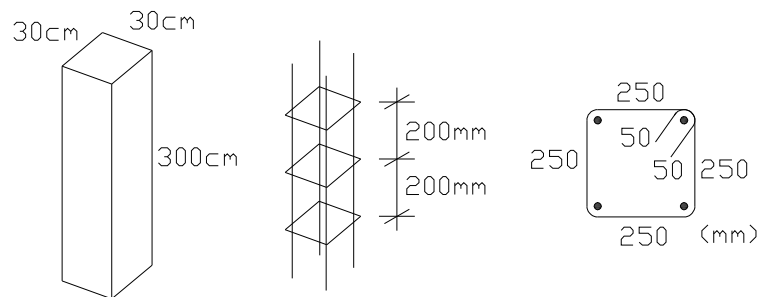
$$\rho_{\text{timber}} = 0,7 \text{ g/cm}^3$$



4) Reinforced concrete column

Cross section: 30 cm × 30 cm.

Reinforcement of RC column: longitudinal bar: 4φ20; link: φ8/200.



$$\gamma_{\text{steel}} = 77 \text{ kN/m}^3, \gamma_{\text{concrete}} = 22,1 \text{ kN/m}^3$$

a) Determine the unit weight in kN/m!

b) Determine the total weight in kN, if the length of the column is 3m!