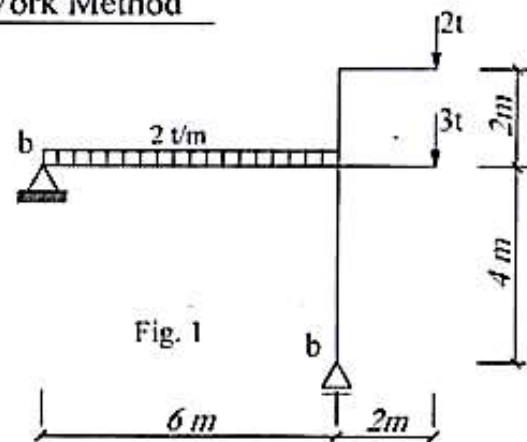


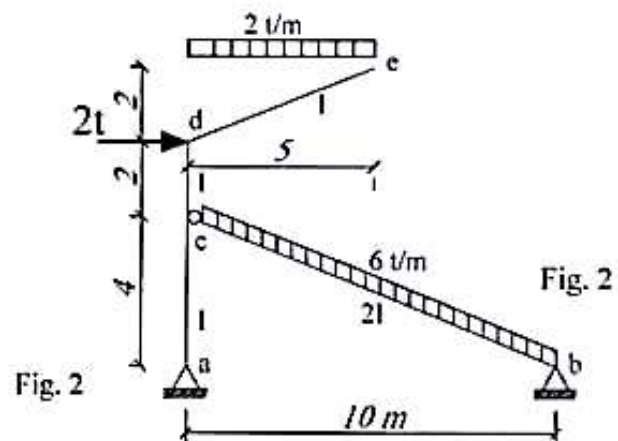


Deflection using Virtual Work Method

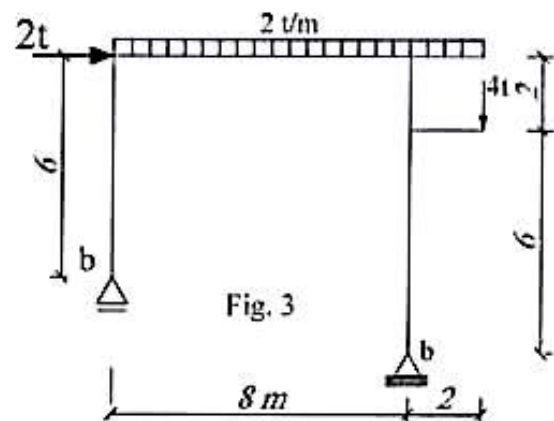
- 1- Calculate the rotation at support (a) and the horizontal displacement at the roller support (b) of the frame shown in Fig. 1  
Take ( $EI = 8000 \text{ m}^2 \text{ t}$ )



- 2- Calculate the horizontal and vertical deflection at point (e) of the frame shown in Fig. 2.  $I = 170000 \text{ cm}^2$ ,  $E = 2000 \text{ t/cm}^2$



- 3- For the frame shown in Fig. 3, determine the horizontal displacement at support (a) and the rotation at point (c)  $EI = \text{Constant}$



- 4- For the truss shown in Fig. 7, it is required to Calculate the vertical deflection at joint (c)

For all members:  $\frac{EA}{L} = 200 \text{ t/cm}$

