

DATE: 10 – 12 - 2015

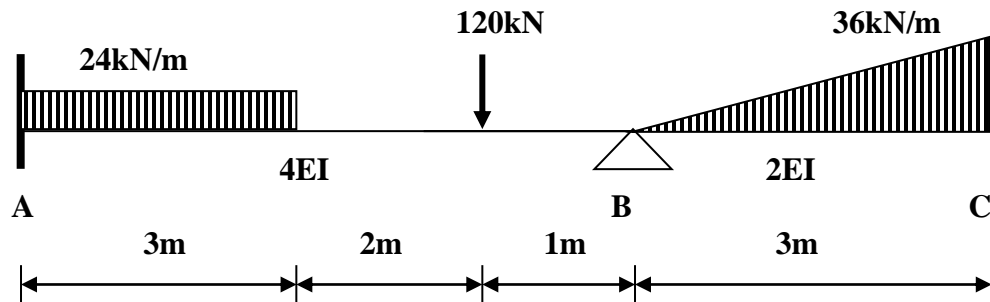
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MIDTERM EXAMINATION # 2

Name: .....

1- (25 points) Draw the shear and moment diagrams if support B settles 0.04m  
Using stiffness method.

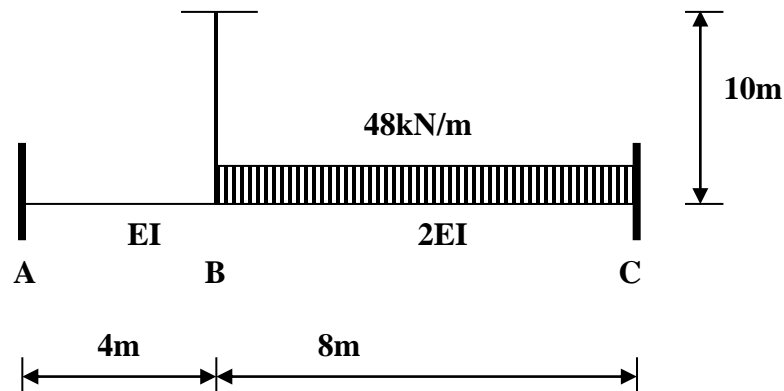
$$[E = 200.10^6 \text{ kN/m}^2, I = 300.10^6 \text{ mm}^4]$$



2- (25 points)

(A-20 points) Determine the reactions using stiffness method. Show all diagrams.

(B- 5 points) Is this Cable adequate for the given loads? Verify your answer?

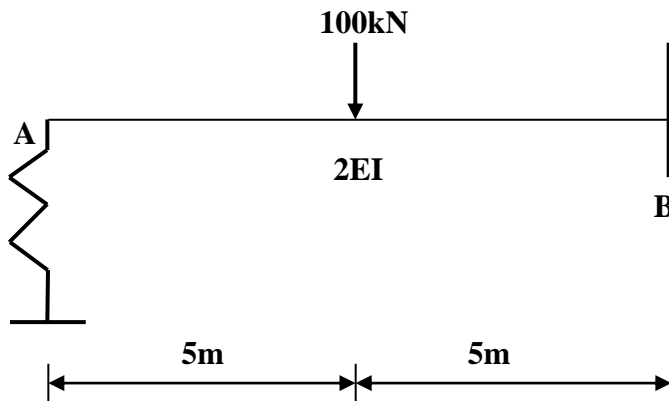


$$E = 200.10^6 \frac{\text{kN}}{\text{m}^2}, \quad A_c = 400.10^{-6} \text{ m}^2, \quad I = 500.10^{-6} \text{ m}^4, \\ f_{y_{\text{Cable}}} = 250 \text{ MPa}$$

3- (25 points)

(A- 20 points) Determine the reactions using stiffness method.  
Show all diagrams.

(B- 5 points) Is this spring adequate for the given loads if  $\Delta_{\text{CODE}} = L / 360$ ?  
Verify your answer?



$$K_{\text{SPRING}} = 400 \frac{\text{kN}}{\text{m}}, E = 200 \cdot 10^6 \frac{\text{kN}}{\text{m}^2}, I = 500 \cdot 10^{-6} \text{m}^4$$

4- (25 points) Determine the reactions using moment distribution method.

