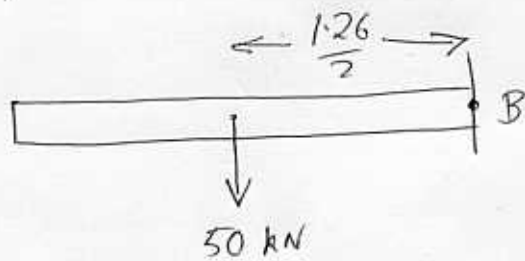


Qu. 9

Taking moments about B we assume the weight of the whole beam acts at its mid-point.

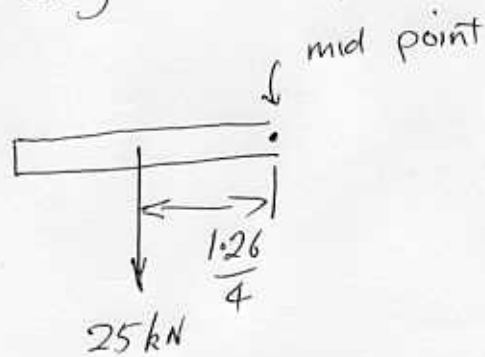


$$\begin{aligned} \text{The additional moment} &= -50 \text{ kN} \times \frac{1.26}{2} \\ &= -31.5 \text{ kNm} \end{aligned}$$

The anti c/w moment therefore increases

$$\text{by } \frac{-31.5}{-725} \times 100\% = \underline{4.3\%}$$

Taking moments about the mid-point we assume half the weight of the beam acts half way along the half (i.e. at the quarter point)



$$\begin{aligned} \text{The additional moment} &= -25 \text{ kN} \times \frac{1.26}{4} \\ &= -6.3 \text{ kNm} \end{aligned}$$

The anti c/w moment therefore increases

$$\text{by } \frac{-6.3}{-362} \times 100\% = \underline{1.7\%}$$

Note the inclusion of the weight increases the moments by quite a small percentage.