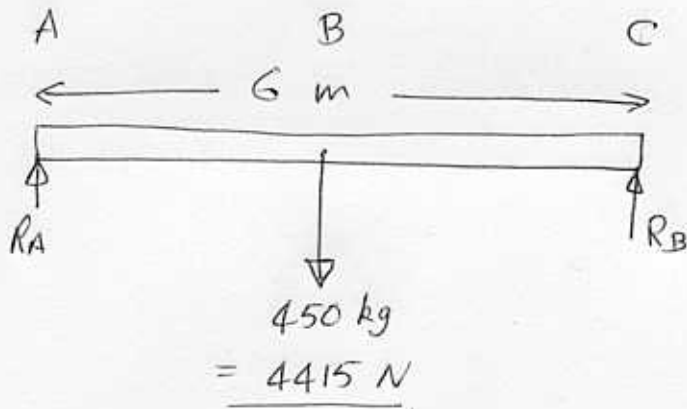


Qn. 6



$$R_A = R_B = \frac{4415}{2} = \underline{2207.5 \text{ N}}$$

The maxm. BM is at centre and equal to

$$2207.5 \times 3 = \underline{6622.5 \text{ Nm}}$$

$$\text{Maxm. allowable stress} = 80 \text{ MN/m}^2$$

In this case we cannot find an I -value unless we specify a depth for the beam. This would be restrictive so instead we can find Z (the section modulus) and use this for selection.

$$\sigma = \frac{M}{Z} \therefore Z = \frac{M}{\sigma}$$

$$\begin{aligned} \therefore Z &= \frac{6622.5}{80 \times 10^6} = 82.77 \times 10^{-6} \text{ m}^3 \\ &= \underline{82.77 \text{ cm}^3} \end{aligned}$$