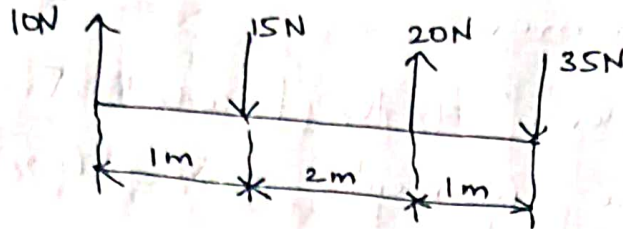


⑤ Four parallel forces of magnitudes 10N, 15N, 20N & 35N are shown in figure. Determine the magnitude & direction of the R. force from point A.



Magnitude of Resultant force.

$$R = 10 - 15 + 20 - 35$$

$$R = -20\text{N}$$

$$R = 20\text{N acting downwards}$$

Moments of forces about point A.

$$\begin{aligned} \sum M_A &= (10 \times 0) + (15 \times 1) - (20 \times 3) + (35 \times 4) \\ &= 15 - 60 + 140 \end{aligned}$$

$$\sum M_A = 95\text{Nm}$$

Location of R. force :  $x = ?$

$$R \times x = \sum M_A$$

$$-20 \times x = 95$$

$$x = -4.75\text{m}$$

