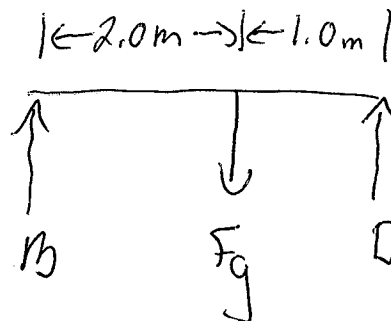


Determine the four support forces given that the person has a mass of 75kg and ignoring the mass of the beams.

Solution :

Beam BC



$$\sum \tau_D = 0 = F_g(1.0m) + B(3.0m)$$

↙ clockwise torque
counter

$$0 = 75kg(9.8m/s^2) 1.0m + B(3.0m)$$

$$\frac{-(75kg) 9.8m/s^2 (1.0m)}{-3.0m} = B$$

$245N = B$

$$\sum F_y = 0 = B + F_g + D$$

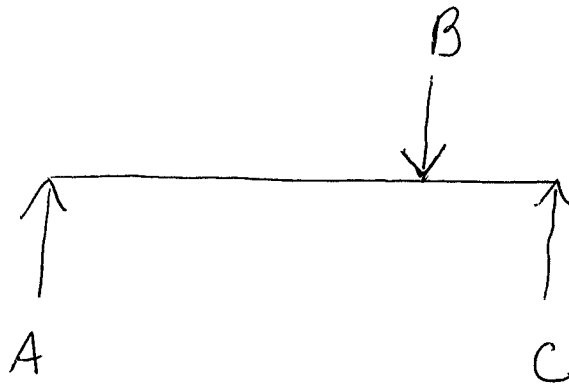
$$0 = 245N + 75kg(9.8m/s^2) + D$$

$490N = D$

3

Beam AC

$| \leftarrow 1.0m \rightarrow |$



$| \leftarrow 5.0m \rightarrow |$

$$\sum \overset{\text{clockwise}}{\tau}_C = 0 = B(1.0m) + \bar{A}(5.0m)$$

$$0 = 245N(1.0m) + \bar{A}(5.0m)$$

$$A = \frac{-(245N)1.0m}{-5.0m}$$

$$\boxed{A = 49N}$$

$$\sum F_y = 0 = A + B + C$$

$$= 49N + -245N + C$$

$$\boxed{C = 196N}$$