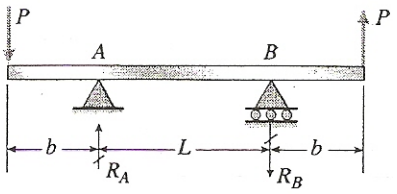
Solution 4.3-3 Beam with overhangs

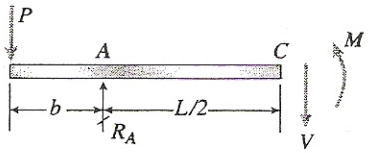


$\Sigma M_B = 0$

$$R_A = \frac{1}{L}[P(L + b + b)]$$

$$= P\left(1 + \frac{2b}{L}\right) \quad \text{(upward)}$$

$\Sigma M_A = 0$: $\quad R_B = P\left(1 + \frac{2b}{L}\right)$ (downward)



FREE-BODY DIAGRAM (C IS THE MIDPOINT)

$\Sigma F_{\text{VERT}} = 0$:

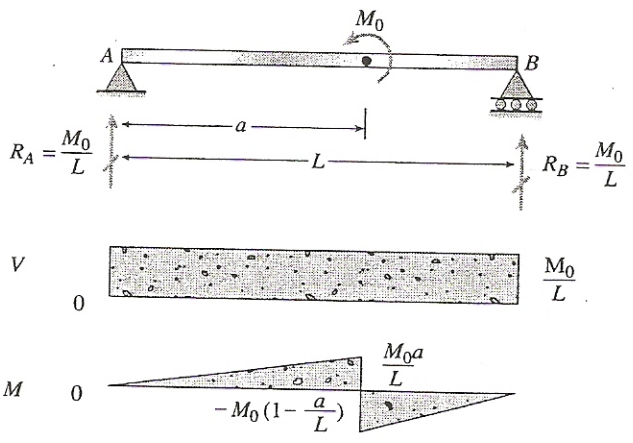
$$V = R_A - P = P\left(1 + \frac{2b}{L}\right) - P = \frac{2bP}{L} \leftarrow$$

$\Sigma M_C = 0$:

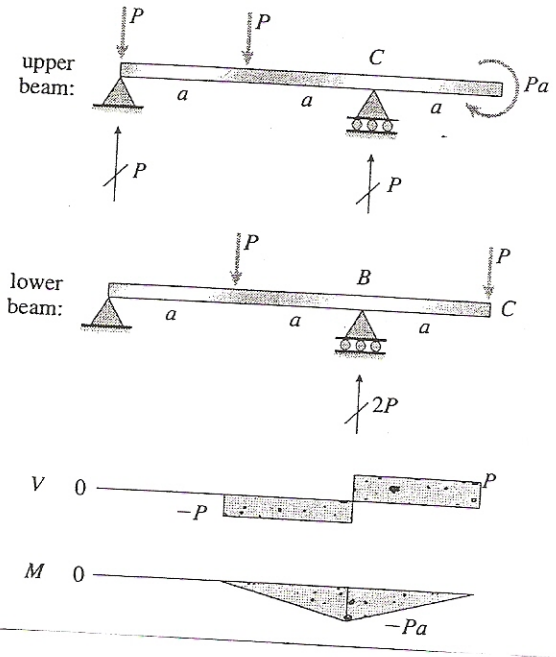
$$M = P\left(1 + \frac{2b}{L}\right)\left(\frac{L}{2}\right) - P\left(b + \frac{L}{2}\right)$$

$$M = \frac{PL}{2} + Pb - Pb - \frac{PL}{2} = 0 \leftarrow$$

Solution 4.5-2 Simple beam



Solution 4.5-8 Beam with overhang



Solution 4.5-26 Compound beam