



F_s - shear force

T_b - bending torque

$$3l < x < 4l$$

$$F_s = R_{AY} - P - 2P$$

$$F_s = 1\frac{1}{4}P - 3P = -1\frac{3}{4}P$$

$$T_b = R_{AY} \cdot x - P \cdot (x-l) - 2P \cdot (x-3l)$$

for $x=3l$

$$T_b = 3 \cdot 1\frac{1}{4}P \cdot l - 2P \cdot l - 0$$

$$T_b = 1\frac{3}{4}P \cdot l$$

for $x=4l$

$$T_b = 4 \cdot 1\frac{1}{4}P \cdot l - 3P \cdot l - 2P \cdot l$$

$$T_b = 5P \cdot l - 5P \cdot l$$

$$T_b = 0$$

$$x=3l \left. \begin{array}{l} F_s = 1\frac{1}{4}P - 3P \\ F_s = -1\frac{3}{4}P \end{array} \right\}$$

$$\sum F_{ix} = 0 \quad R_{Ax} = 0$$

$$\sum F_{iy} = 0 \quad R_{Ay} - P - 2P + R_B = 0$$

$$\sum T_{iA} = 0 \quad P \cdot l + 2P \cdot 3l - R_B \cdot 4l = 0$$

$$R_B \cdot 4l = 7 \cdot P \cdot l \quad | : l$$

$$4R_B = 7P$$

$$R_B = \frac{7}{4}P$$

$$R_{Ay} - P - 2P + \frac{7}{4}P = 0$$

$$R_{Ay} = 3P - \frac{7}{4}P$$

$$R_{Ay} = 1\frac{1}{4}P$$

$$0 < x < l$$

$$F_s = R_{Ay} = 1\frac{1}{4}P$$

$$T_b = R_{Ay} \cdot x$$

for $x=0$

$$T_b = 0$$

for $x=l$

$$T_b = 1\frac{1}{4}P \cdot l$$

$$x=0 \left. \begin{array}{l} F_s = 1\frac{1}{4}P \\ F_s = 1\frac{1}{4}P \end{array} \right\}$$

$$F_s = R_{Ay} - P - 2P + R_B$$

$$l < x < 3l$$

$$F_s = R_{Ay} - P = 1\frac{1}{4}P - P = \frac{1}{4}P$$

$$T_b = R_{Ay} \cdot x - P \cdot (x-l)$$

for $x=l$

$$T_b = 1\frac{1}{4}P \cdot l - 0 = 1\frac{1}{4}P \cdot l$$

for $x=3l$

$$T_b = 1\frac{1}{4}P \cdot 3l - P \cdot 2l = 3\frac{3}{4}P \cdot l - 2P \cdot l$$

$$T_b = 1\frac{3}{4}P \cdot l$$

$$x=l \left. \begin{array}{l} F_s = \frac{1}{4}P \\ F_s = \frac{1}{4}P \end{array} \right\}$$