



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

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

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

$$R_B \cdot 2l = P \cdot 3l - M$$

$$2R_B \cdot l = 3P \cdot l - 0,5P \cdot l \quad | : l$$

$$2R_B = 3P - 0,5P$$

$$2R_B = 2,5P \quad | : 2$$

$$\boxed{R_B = 1,25P}$$

$$R_{Ay} = P - R_B$$

$$R_{Ay} = P - 1,25P = -0,25P$$

$$\boxed{R_{Ay} = -0,25P}$$

$0 < x < l$

$$T = R_{Ay}$$

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

dlu $x = 0$

$$M_g = 0$$

dlu $x = l$

$$M_g = -0,25P \cdot l$$

$l < x < 2l$

$$T = R_{Ay}$$

$$M_g = R_{Ay} \cdot x - M$$

dlu $x = l$

$$M_g = -0,25P \cdot l - 0,5P \cdot l$$

$$M_g = -0,75P \cdot l$$

dlu $x = 2l$

$$M_g = -0,25P \cdot 2l - 0,5P \cdot l$$

$$M_g = -0,5P \cdot l - 0,5P \cdot l$$

$$M_g = -P \cdot l$$

$2l < x < 3l$

$$T = R_{Ay} + R_B$$

$$M_g = R_{Ay} \cdot x - M + R_B(x - 2l)$$

dlu $x = 2l$

$$M_g = -0,25P \cdot 2l - 0,5P \cdot l + 0$$

$$M_g = -P \cdot l$$

dlu $x = 3l$

$$M_g = -0,25P \cdot 3l - 0,5P \cdot l + 1,25P \cdot l$$

$$M_g = -0,75P \cdot l - 0,5P \cdot l + 1,25P \cdot l$$

$$M_g = 0$$

$x = 2l$

$$T = -0,25P + 1,25P$$

$x = 3l$

$$T = P$$

$$\sigma = \frac{M_{g \max}}{J_z} \cdot y_{\max} \leq k_g \quad \text{dlu} \quad \text{tręba} \quad \text{pokoju}$$

$$\frac{P \cdot l}{53147 \cdot a^4} \cdot l \cdot a \leq k_g \quad \text{dlu} \quad a \geq \sqrt[3]{\frac{4 \cdot P \cdot l}{53147 \cdot k_g}}$$