

um Punkt 1 $\curvearrowright$

$$\sum F_x = 0$$

$$H_1 = 0$$

$$\sum F_z = 0$$

$$-V_1 - V_2 + \underbrace{\int_0^L q dx}_{qL} = 0$$

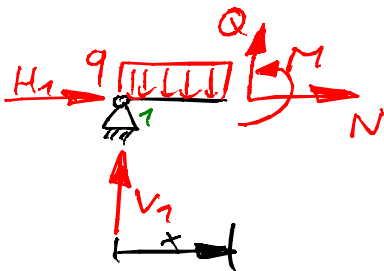
$$V_1 + V_2 = qL$$

$$\sum M_y = 0$$

$$V_2 L - \underbrace{\int_0^L qx dx}_{q \frac{L^2}{2}} = 0$$

$$\underline{V_2 = q \frac{L}{2}} \rightarrow \underline{V_1 = q \frac{L}{2}}$$

Schnittkräfte in I



um Punkt 1 $\curvearrowright$

$$\sum F_x = 0$$

$$H_1 + N = 0 \rightarrow \underline{N = 0}$$

$$\sum F_z = 0$$

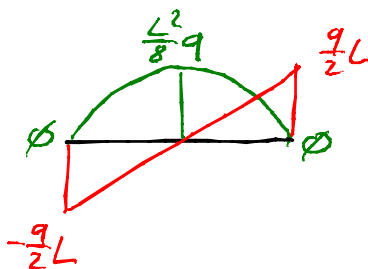
$$-V_1 + \underbrace{\int_0^x q dx}_{qx} - Q = 0$$

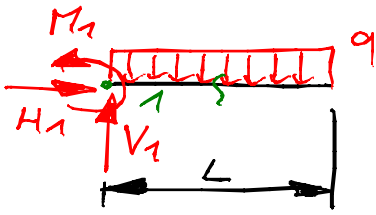
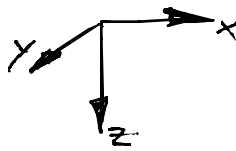
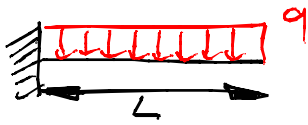
$$Q = qx - V_1 = \underline{q(x - \frac{L}{2})}$$

$$\sum M_y = 0$$

$$Qx + M - \underbrace{\int_0^x qx dx}_{q \frac{x^2}{2}} = 0$$

$$M = q \frac{x^2}{2} - Qx = \underline{\underline{\frac{q}{2}(Lx - x^2)}}$$





um Punkt 1 $\rightarrow$

$$\sum F_x = 0$$

$$\sum F_y = 0$$

$$\sum M_y = 0$$

$$H_1 = 0$$

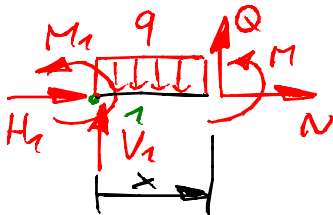
$$-V_1 + \underbrace{\int_0^L q dx}_{qL} = 0$$

$$V_1 = qL$$

$$M_1 - \underbrace{\int_0^L qx dx}_{q \frac{L^2}{2}} = 0$$

$$M_1 = q \frac{L^2}{2}$$

Schnittkräfte in I



um Punkt 1 $\rightarrow$

$$\sum F_x = 0$$

$$\sum F_z = 0$$

$$\sum M_y = 0$$

$$H_1 + N = 0 \rightarrow N = 0$$

$$-V_1 - Q + \underbrace{\int_0^x q dx}_{qx} = 0$$

$$Q = qx - V_1 = q(x - L)$$

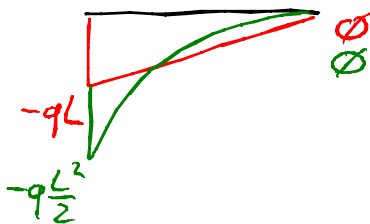
$$M_1 + M - \underbrace{\int_0^x qx dx}_{q \frac{x^2}{2}} + Qx = 0$$

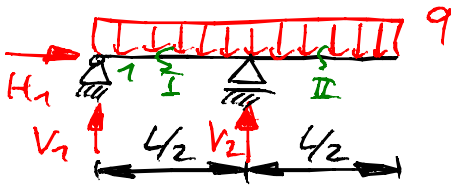
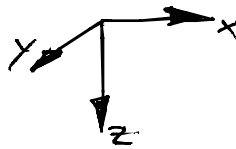
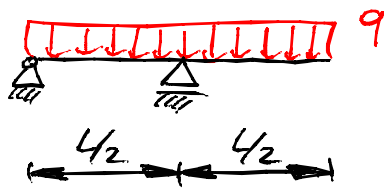
$$M = q \frac{x^2}{2} - Qx - M_1$$

$$= q \frac{x^2}{2} - qx(x - L) - q \frac{L^2}{2}$$

$$= -q \frac{x^2}{2} + qxL - q \frac{L^2}{2}$$

$$M = -\frac{q}{2}(x - L)^2$$





$$\sum F_x = 0$$

$$H_1 = 0$$

$$\sum F_z = 0$$

$$-V_1 - V_2 + \underbrace{\int_0^L q dx}_{qL} = 0$$

$$V_1 + V_2 = qL$$

um Punkt 1 $\curvearrowright$

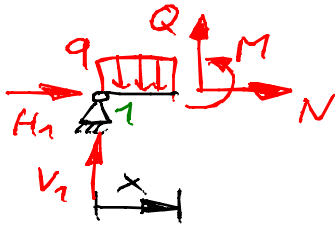
$$\sum M_y = 0$$

$$V_2 \frac{L}{2} - \underbrace{\int_0^L qx dx}_{q \frac{L^2}{2}} = 0$$

$$V_2 \frac{L}{2} = q \frac{L^2}{2}$$

$$\underline{V_2 = qL} \rightarrow \underline{V_1 = 0}$$

Schnittkräfte in I ($x < \frac{L}{2}$)



$$\sum F_x = 0$$

$$H_1 + N = 0 \rightarrow \underline{N = 0}$$

$$\sum F_z = 0$$

$$-V_1 - Q + \underbrace{\int_0^x q dx}_{qx} = 0$$

$$Q = qx - V_1 = \underline{qx}$$

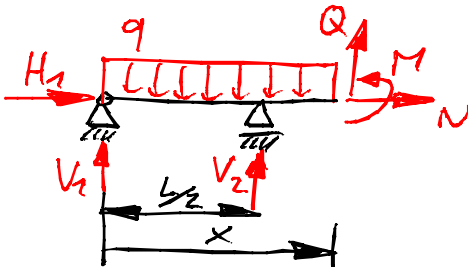
um Punkt 1 $\curvearrowright$

$$\sum M_y = 0$$

$$Qx + M - \underbrace{\int_0^x qx dx}_{q \frac{x^2}{2}} = 0$$

$$M = q \frac{x^2}{2} - qx^2 = \underline{-q \frac{x^2}{2}}$$

Schnittkräfte in II ($x \geq \frac{L}{2}$)



$$\sum F_x = 0$$

$$H_1 + N = 0 \rightarrow \underline{N = 0}$$

$$-V_1 - V_2 + \underbrace{\int_0^x q dx}_{qx} + Q = 0$$

$$\sum F_z = 0$$

$$Q = V_1 + V_2 - qx = \underline{q(L-x)} \quad x \geq \frac{L}{2}$$

$$\sum M_y = 0$$

$$M + V_2 \frac{L}{2} - \underbrace{\int_0^x qx dx}_{q \frac{x^2}{2}} = 0$$

$$M = q \frac{x^2}{2} - V_2 \frac{L}{2}$$

$$\underline{M = \frac{q}{2}(x^2 - L^2)} \quad x \geq \frac{L}{2}$$

