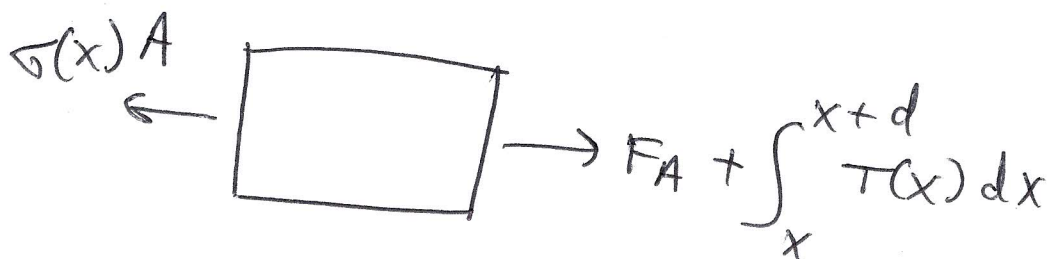


FBD:



$$\sum F_x = 0$$

$$-\sigma(x)A + F_A + \int_x^{x+d} T(x) dx$$

$$\Rightarrow \sigma_x = \frac{1}{A} \left\{ F_A + \int_x^{x+d} T(x) dx \right\}$$

For $T(x) = \text{constant} = T$:

$$\begin{aligned} \sigma_x &= \frac{1}{A} \{ F_A + Td \} \\ &= \frac{1}{A} \{ F_A + T(L-x) \} \end{aligned}$$