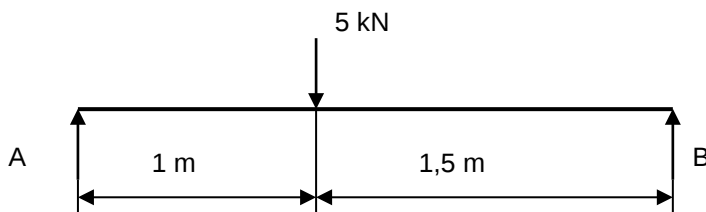
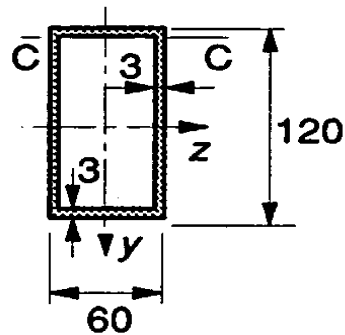
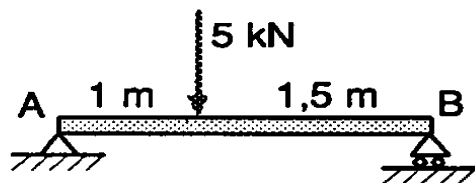


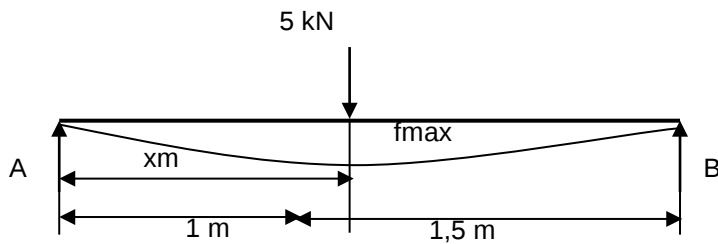
TMKS0700 STATIIKKA JA LUJUUSOPPI

Tehtävä L3-12

Määritä kuvan teräspalkille suurin taipuma ja sen paikka. Palkin omaa painoa ei oteta huomioon.



=>



$$f_{\max} = [Fa(L^2 - a^2)^{3/2}] / (9\sqrt{3}LEI)$$

Tapaus 2

$$\begin{aligned} F &= 5000 \text{ N} \\ a &= 1000 \text{ mm} \\ L &= 2500 \text{ mm} \\ E &= 210000 \text{ MPa} \end{aligned}$$

$$I_z = (BH^3 - bh^3) / 12$$

$$\begin{aligned} B &= 60 \text{ mm} \\ H &= 120 \text{ mm} \\ b &= 54 \text{ mm} \\ h &= 114 \text{ mm} \end{aligned}$$

$$\Rightarrow I_z = 1973052 \text{ mm}^4$$

$$\Rightarrow f_{\max} = 3,725 \text{ mm}$$

$$x_m = L - [(L^2 - a^2)/3]^{1/2}$$

$$\Rightarrow x_m = 1177,1 \text{ mm}$$

V: $f_{\max} = 3,7 \text{ mm}$

$x = 1177 \text{ mm}$