Remarks: See §4.4, pages 168 till 170
See §4.5, pages 171 till 184
See §4.7.4, pages 196 till 198

Hint:
Draw the shear force diagram and the moment diagram

Answers:

a. $\sigma_{max} = 25,5$ N/mm^2 (tension at the bottom and compression at the top)
b. $\sigma_{max} = 29,0$ N/mm^2 (tension at the top and compression at the bottom)

Explanation:

a. Support reactions $81,562$ kN $(\uparrow)$ left and $39,375$ kN $(\uparrow)$ right.
Support point moment: $M = 13,05$ kNm $(\frown)$
Maximum span-moment: $M = 45,88$ kNm $(\smile)$
This gives $V_z = 0$,which is 1,875 m left from the right support point.
The span-moment is greater:

$$\sigma_{max} = \pm\frac{(45,88\times10^6 \text{ Nmm})(150 \text{ mm})}{270\times10^6 \text{ mm}^4} = \pm25,5 \text{ N/mm}^2$$

b. Support reactions $117,47$ kN $(\uparrow)$ left and $39,15$ kN $(\uparrow)$ right.
Support point moment: $M = 52,20$ kNm $(\frown)$
Maximum span-moment: $M = 29,36$ kNm $(\smile)$
This gives $V_z = 0$, which is 1,5 m left from the right support point.
The support point moment is greater:

$$\sigma_{max} = \pm\frac{(52,20\times10^6 \text{ Nmm})(150 \text{ mm})}{270\times10^6 \text{ mm}^4} = \pm29,0 \text{ N/mm}^2$$