2. a)

$(1 \times 5) + (10 \times 2) = R_2 \times 3$

$25 = 3R_2$

$R2 = 8.33$

so

$R1 = 6.67$.

LARGEST BENDING MOMENT = $8.34 KN_M$

2.5)

$BM = 8.34 kNm$

$I_{xx} = \frac{bd^3}{12}$ $\quad b = 100\,mm$, $d = 200\,mm$

$= \frac{100 \times 200^3}{12}\ mm^4$

$= \frac{100 \times 200^3}{12} \times 10^{-12}\ m^4$

$I_{xx} = 6.66 \times 10^{-5}\ m^4$

$y = 100\,mm = 100 \times 10^{-3}\ m$

$\frac{M}{I} = \frac{\sigma}{y}$ so $\sigma = \frac{My}{I}$

$\sigma = \frac{8.34 \times 100 \times 10^{-3}}{6.66 \times 10^{-5}}$

$= 1.25\ MNm^{-2}$

2. c)