

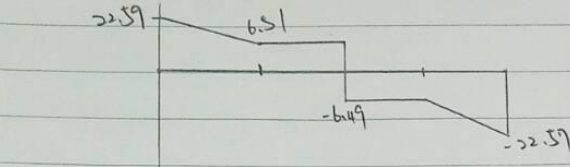
潘衍廷 4A312042 自控 = 甲

No.
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$$\sum M_A = 0 \quad 16.8 \times \frac{9.75}{8} + 13 \times \frac{9.75}{2} + 16.08 \times 9.75 \times \frac{1}{8} = R_B \times 9.75$$

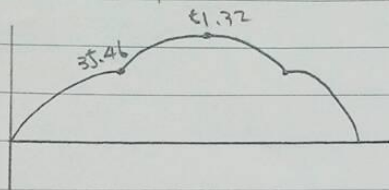
$$19.59 + 63.37 + 137.18 = 9.75 R_B \quad R_B = 22.57 \text{ kN}$$

$$16.08 \times 2 + 13 = 22.57 + R_A \quad R_A = 22.59$$



$$(22.59 + 6.51) \times \frac{9.75}{4} \times \frac{1}{2} = 35.46$$

$$6.51 \times \frac{9.75}{4} = 15.86$$



$$S = \frac{51.32 \times 1000 \times 1000 \text{ N-mm}}{124 \text{ MPa}}$$

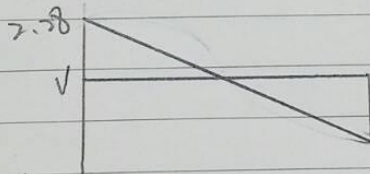
$$= 413870.96 \text{ mm}^3$$

IPN 280 $S = 542 \text{ cm}^3$ $w = 47.9 \text{ kg/m} \times 9.8 = 469.42 \text{ N/m}$

$$\sum M_A = 0$$

$$16.8 \times \frac{9.75}{8} + 13 \times \frac{9.75}{2} + 0.469 \times \frac{9.75}{2} + 16.08 \times 9.75 \times \frac{1}{8} = R_B \times 9.75$$

$$R_A = R_B = 22.7 \text{ kN} \quad P = 0.469 \times 9.75 = 4.57 \text{ kN}$$



$$22.7 \times \frac{9.75}{2} \times \frac{1}{2} = 5.57$$

$$M_{\max} = 51.32 + 5.57 = 56.89 \text{ kN-m}$$

$$S = \frac{56.89 \times 1000000 \text{ N-mm}}{124}$$

$$= 458814.83 \text{ mm}^3 = 458.81 \text{ cm}^3$$

$$458.81 < 542 \rightarrow \text{Sign } 280$$