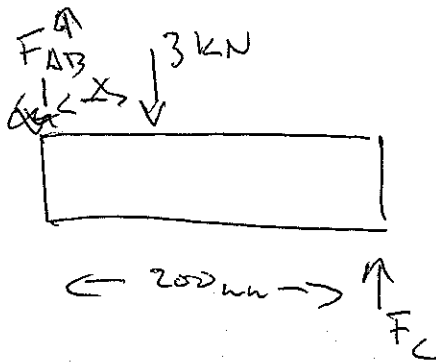


1.8



$$\sum F_x = 0$$

$$+F_{AB} - 3 + F_C = 0$$

$$+\frac{400}{650} F_C - 3 + F_C = 0$$

$$\frac{10250}{650} F_C = 3 \text{ kN}$$

$$F_C = \frac{11.86}{11.86} \text{ kN}$$

$$\sum M_A = 0$$

$$-3x + 200 \text{ mm} \left(\frac{1.86}{7.8} \text{ kN} \right) = 0$$

$$x = 200 \text{ mm} \left(\frac{1.86}{3} \text{ kN} \right)$$

$$= 124 \text{ mm}$$

$$\sigma_{AB} = \sigma_C$$

$$\frac{F_{AB}}{400 \text{ mm}^2} = \frac{F_C}{650 \text{ mm}^2}$$

$$F_{AB} = \frac{400}{650} F_C$$

1.14

$$F_{AB} = 9.8 \text{ kN}$$

$$\sum F_x = 0$$

$$A_x + \frac{3}{5} B = 0$$

$$\sum F_y = 0$$

$$A_y - 30 + \frac{4}{5} B = 0$$

$$\sum M_A = 0$$

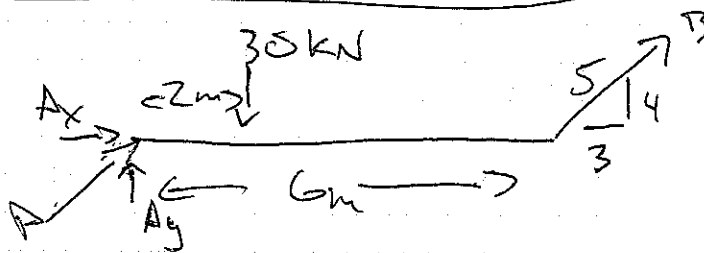
$$-2(30) + 6\left(\frac{4}{5}\right)B = 0$$

$$6\left(\frac{4}{5}\right)B = 60$$

$$\frac{4}{5}B = 10$$

$$B = 12.5 \text{ kN}$$

1.9



$$A_x = -\frac{3}{5}(12.5)$$

$$= -7.5 \text{ kN}$$

$$A_y = 30 - \frac{4}{5}(12.5)$$

$$= 20 \text{ kN}$$

$$A = \sqrt{20^2 + (-7.5)^2} = 21.21 \text{ kN}$$

$$\tau_B = \frac{12.5 \text{ kN}}{\pi (15 \text{ mm})^2}$$

$$= 17.7 \text{ MPa}$$

$$\tau_A = \frac{21.4}{2\pi (10 \text{ mm})^2}$$

$$= 34.0 \text{ MPa}$$