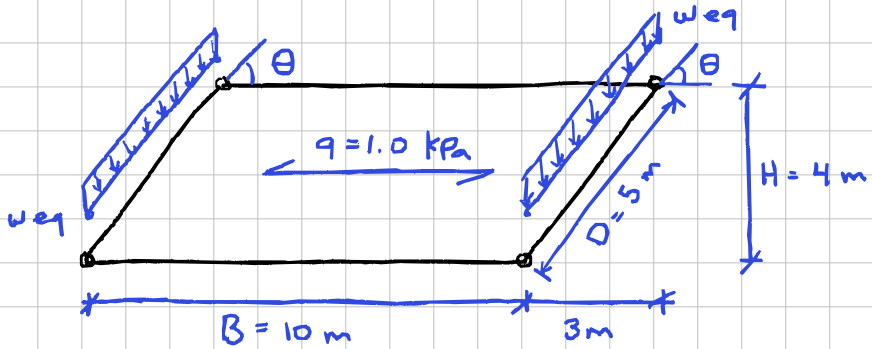


06 Tributary widths of angled members



$$w_{eq} = B_t \cdot \sin \theta \cdot q = \frac{10 \text{ m}}{2} \cdot \sin(53.13^\circ) \cdot 1.0 \text{ kPa}$$

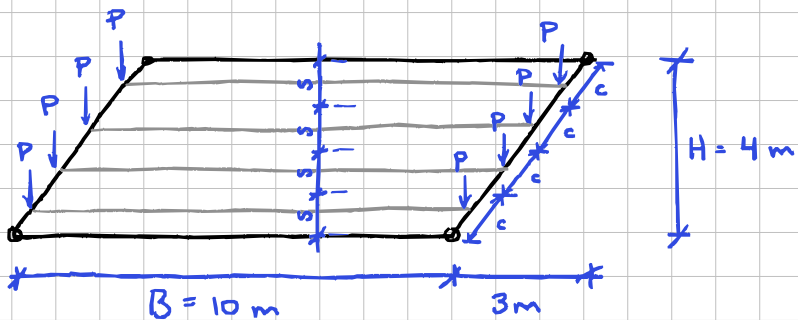
$$w_{eq} = B_t \cdot H/D \cdot q = \frac{10 \text{ m}}{2} \cdot \frac{4 \text{ m}}{5 \text{ m}} \cdot 1.0 \text{ kPa}$$

$$w_{eq} = 4 \text{ kN/m}$$

To confirm $\rightarrow T_1 = A \cdot q = 40 \text{ m}^2 \cdot 1.0 \text{ kPa} = \underline{40 \text{ kN}}$

$$T_2 = 2 \cdot L \cdot w_{eq} = 2 \cdot 5 \text{ m} \cdot 4 \text{ kN/m} = \underline{40 \text{ kN}} = T_1$$

To make this intuitive, let's simulate joists.



$$P = s \cdot B_t \cdot q = 5 \text{ kN}$$

$$w_{eq} = P/c = 4 \text{ kN/m}$$