

Example 3.3 - span AB.

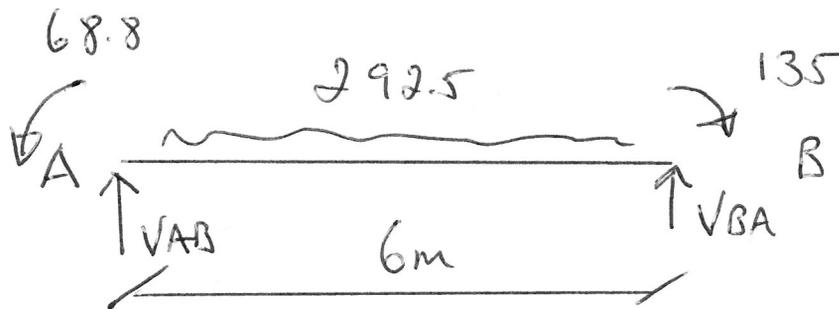
From moment distribution (Table 3.2)

$$M_{AB} = +68.8 \text{ kNm (anticlockwise)}$$

$$M_{BA} = -135.0 \text{ kNm (clockwise)}$$

↑ Sign
convention
for M.D.

Draw free body diagram of AB



Take moments about B (clockwise +ve)

$$\sum M_B: V_{AB} \times 6 - 292.5 \times 3 - 68.8 + 135 = 0$$

$$\therefore V_{AB} = \frac{292.5 \times 3 + (-135 + 68.8)}{6}$$

$$= \frac{292.5}{2} - \frac{(135 - 68.8)}{6}$$

$$= \frac{292.5}{2} - \frac{(-68.8 + 135)}{6}$$

$$= \underline{135 \text{ kN}}$$

$$V_{AB} = \frac{\text{load}}{2} - \frac{(M_{AB} - M_{BA})}{L}$$