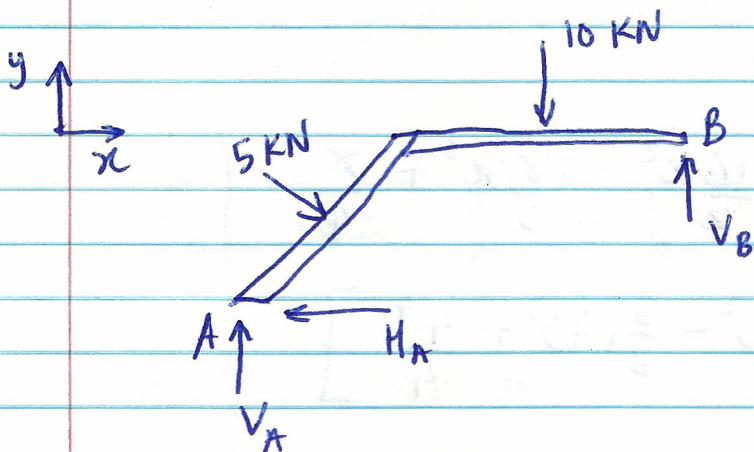


Equilibrium of a Rigid Body

F5-3

free body diagram



Equations of Equilibrium

$$\sum \text{horizontal forces} = 0$$

$$5 \cos 45 - H_A = 0$$

$$\Rightarrow H_A = 5 \cos 45 = 3.54 \text{ kN}$$

$$\sum \text{moments about A} = 0$$

$$V_B (4 \cos 45 + 6) - 10(6 \cos 45 + 2) - 5 \sin 45 (4 \cos 45) - 5 \cos 45 (4 \sin 45) = 0$$

$$\Rightarrow V_B = \frac{82.03}{10.24} = \cancel{7.04 \text{ kN}} \quad 8.00 \text{ kN}$$