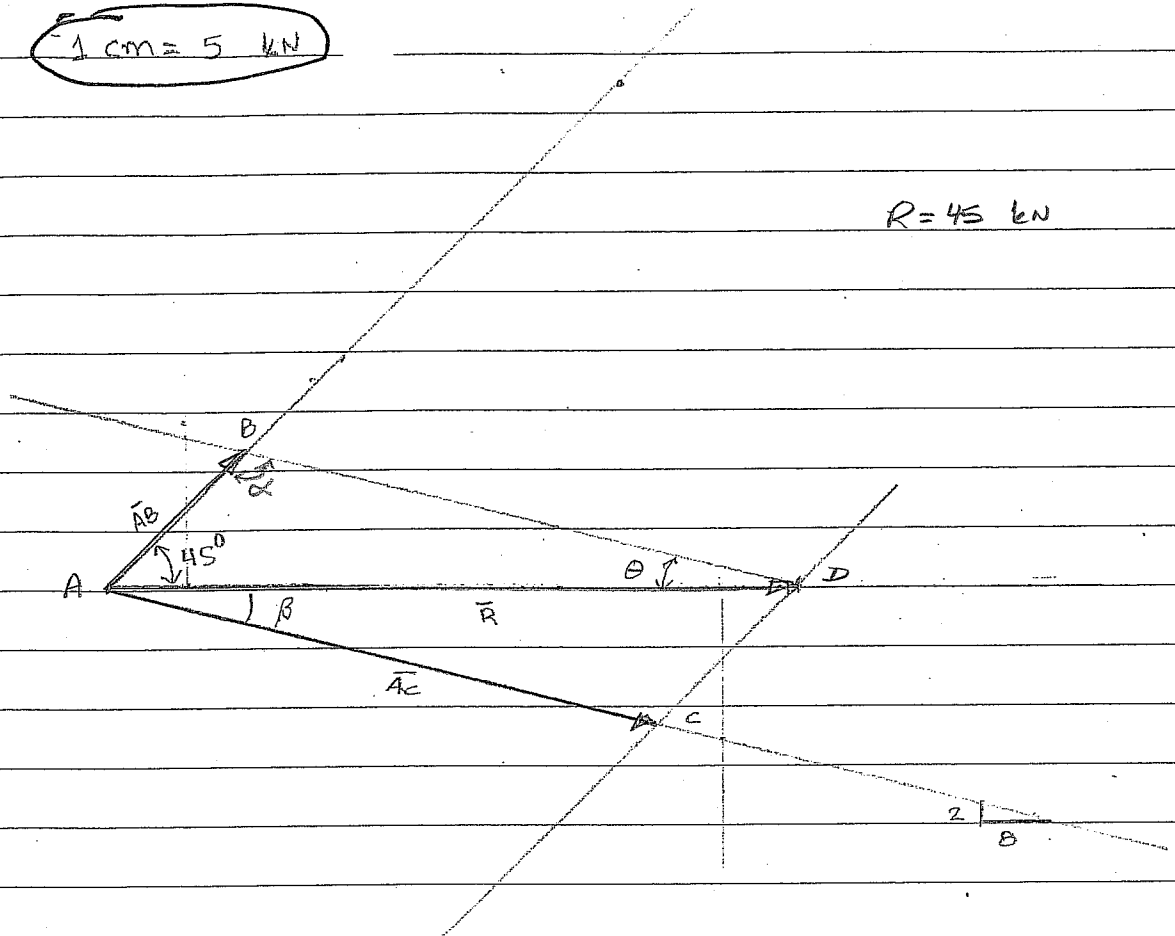


1(a)

$$1 \text{ cm} = 5 \text{ kN}$$

$$R = 45 \text{ kN}$$



$$AC = 7.4 \text{ cm} = 37 \text{ kN}$$

$$AB = 2.5 \text{ cm} = 12.5 \text{ kN}$$

1(b)

From the diagram drawn in 1(a) ABDC is a parallelogram
AD is the diagonal

$$\frac{R}{\sin \alpha} = \frac{AB}{\sin \theta} = \frac{AC}{\sin 45^\circ}$$

$$\text{Note: } \tan \beta = \frac{2}{1}$$

$$AB = 12.65 \text{ kN}$$

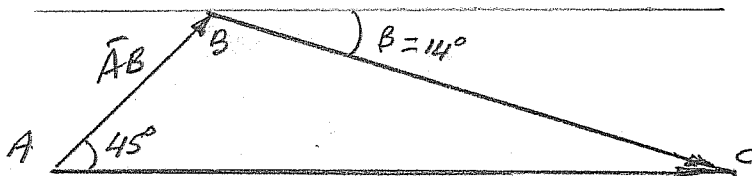
$$AC = 35.7 \text{ kN}$$

$$\beta = 14.0^\circ = \theta$$

$$2\alpha + 2(45 + 14) = 360^\circ$$

$$\alpha = 121^\circ$$

1(c)



calculations
same as 1(b)