DATE

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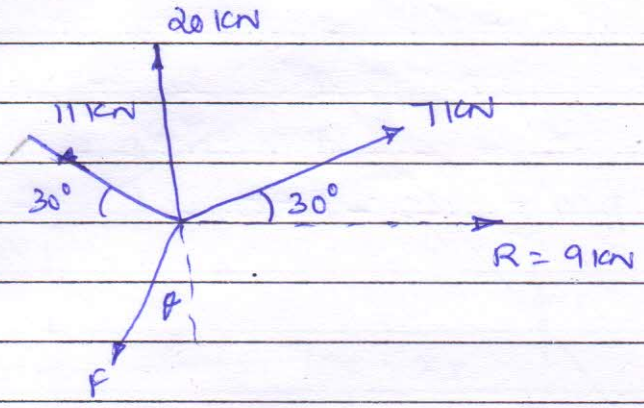

Given

$R = 9$ KN , $\alpha = 0$

To find

$F = ?$

$\theta = ?$

Solution

$$R_x = 7\cos 30° + 11\cos 30° - F\sin\theta = R$$

$$9 = 15.59 - F\sin\theta$$

$$F\sin\theta = 6.59 \quad -①$$

$$R_y = 20 - 11\sin 30° + 7\sin 30° - F\cos\theta = 0$$

$$F\cos\theta = 18 \quad -②$$

$$\frac{①}{②} = \frac{F\sin\theta = 6.59}{F\cos\theta = 18}$$

$$\tan\theta = 0.37$$

$$\theta = 20.10$$

$$\therefore F = \frac{6.59}{\sin 20.10}$$

$$= 19.17 \text{ KN}$$