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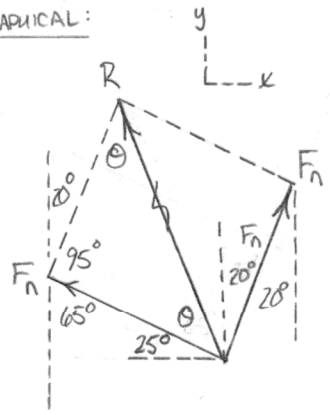
• GRAPHICAL:



$$R = \sqrt{F_n^2 + F_n^2 - 2F_n^2 \cos 95^\circ}$$

$$R = \sqrt{2(5500)^2[1 - \cos 95^\circ]}$$

$$R = 8110 \text{ N}$$

$$\theta = \frac{180^\circ - 95^\circ}{2} \longrightarrow \theta = 42.5^\circ$$

$R = 8110$ N @ 112.5° CCW FROM +x AXIS

• VECTORS:

$$\underline{R} = (F_n \sin 20^\circ - F_n \sin 65^\circ)\underline{i} + (F_n \cos 20^\circ + F_n \cos 65^\circ)\underline{j}$$

$$\underline{R} = 5500\left[(\sin 20^\circ - \sin 65^\circ)\underline{i} + (\cos 20^\circ + \cos 65^\circ)\underline{j}\right]$$

$$\underline{R} = -3100\,\underline{i} + 7490\,\underline{j} \text{ N}$$

$$R = \sqrt{3100^2 + 7490^2} \longrightarrow R = 8110 \text{ N}$$

$$\theta_x = \cos^{-1}\left(\frac{R_x}{R}\right) = \cos^{-1}\left(\frac{-3100}{8110}\right) \longrightarrow \theta_x = 112.5^\circ \text{ CCW FROM +x AXIS}$$