

$$\vec{F}_{net} = \vec{F}_1 + \vec{F}_2 + \dots + \vec{F}_{n-1} + \vec{F}_n$$

$$F_{net} = \sqrt{F_1^2 + F_2^2 + 2F_1F_2 \cos \theta}$$

and $\tan \alpha = \frac{F_2 \sin \theta}{F_1 + F_2 \cos \theta}$