

03-

$$x_1 = -2 \cdot \frac{1}{2} ; y_1 = \frac{2\sqrt{3}}{2} ; x_2 = 5 \cdot \frac{1}{2} ; y_2 = \frac{5\sqrt{3}}{2}$$

$$F_1 + F_2 = \left( \frac{-2 \cdot 1}{2}, \frac{2\sqrt{3}}{2} \right) + \left( \frac{5 \cdot 1}{2}, \frac{5\sqrt{3}}{2} \right)$$

$$\left( \frac{-1 + 5}{2}, \frac{2\sqrt{3} + 5\sqrt{3}}{2} \right)$$

$$F = \left( \frac{4}{2}, \frac{7\sqrt{3}}{2} \right)$$

$$2: \|F\| = \sqrt{\left(\frac{4}{2}\right)^2 + \left(\frac{7\sqrt{3}}{2}\right)^2}$$

$$\|F\| = \sqrt{\frac{16}{4} + \frac{147}{4}} \Rightarrow \|F\| = \sqrt{\frac{163}{4}} \Rightarrow \|F\| = \sqrt{40.75} \Rightarrow \|F\| = 6.38$$

$$b: R^2 = 5^2 + 2^2 + 2 \cdot 5 \cdot 2 \cdot 0.5$$

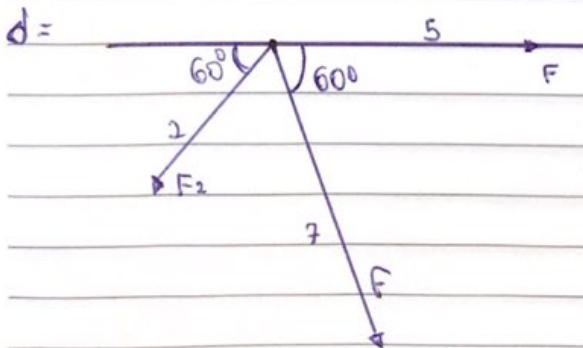
$$R^2 = 25 + 4 + 10$$

$$R^2 = 39$$

$$R = \sqrt{39}$$

$$R \approx 6.24 \text{ kgf}$$

$$\alpha = \arctan \frac{\frac{7\sqrt{3}}{2}}{\frac{4}{2}} \Rightarrow \tan \alpha = \frac{7\sqrt{3}}{4} \Rightarrow \tan \alpha = \sqrt{3} \text{ ou } 60^\circ$$



Q5-

$$2 - U \cdot V = 3 \cdot 4 + 1 \cdot 11 \cdot 2$$

$$U \cdot V = 12 + 1$$

$$U \cdot V = 13$$

$$b = \cos = \frac{13}{\sqrt{3^2 + 1 \cdot 11^2} \cdot \sqrt{4^2 + 2^2}} = \frac{13}{\sqrt{9 + 1} \cdot \sqrt{16 + 4}} = \frac{13}{\sqrt{10} \cdot \sqrt{20}}$$

$$\cos = \frac{13}{\sqrt{200}} = \frac{13}{10\sqrt{2}} = \frac{13}{10\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{13\sqrt{2}}{10\sqrt{2}\sqrt{2}} = \frac{13\sqrt{2}}{20}$$

$$c - \left( \frac{U \cdot V}{|U||V|^2} \right) \cdot V = \left( \frac{13}{\sqrt{20}^2} \right) \cdot V = \left( \frac{13}{20} \right) \cdot (4, 2)$$