

RAYA

الخطب التقاطعي

الخطب النقطي

$$\vec{A} = 10u, 90^\circ$$

$$\vec{B} = 3u, 45^\circ$$

$$\vec{A} \times \vec{B}$$

$$|\vec{A}| |\vec{B}| \sin \theta$$

$$10(3) \sin 45$$

$$21, z^-$$

⊗ لداخل



$$-\vec{B} \times 2\vec{A}$$

$$-2(\vec{B} \times \vec{A})$$

$$-2(21, z^-)$$

$$42, z^-$$

$$\vec{B} \times \vec{B}$$

$$|\vec{B}| |\vec{B}| \sin \theta$$

$$3 \times 3 \sin \theta$$

$$= 0$$

$$\vec{A} = 10u, 30^\circ$$

$$\vec{B} = 5u, 60^\circ$$

مثال:

$$\vec{A} \cdot \vec{B}$$

$$|\vec{A}| |\vec{B}| \cos \theta$$

$$(10)(5) \cos 30$$

$$50 \times 0.87$$

$$43.5u$$

$$\vec{B} \cdot \vec{B}$$

$$|\vec{B}| |\vec{B}| \cos \theta$$

$$(5)(5) \cos 0$$

$$25u$$

$$\vec{A} \cdot 2\vec{B}$$

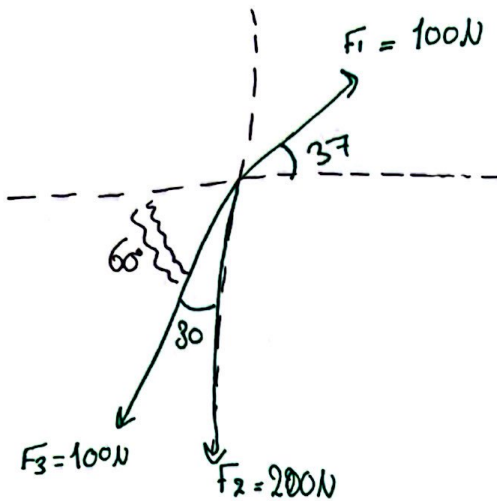
$$-2(\vec{A} \cdot \vec{B})$$

$$-2 \times 43.5$$

$$-87u$$

النقطي ← cos

جمع و طرح المتجهات



أوجد محصلة المتجهات الموضحة :-

$$F_{1x} : +100 \cos 37 = 80$$

$$F_{1y} : +100 \sin 37 = 60$$

$$F_{2x} : 200 \cos 270 = 0$$

$$F_{2y} : 200 \sin 270 = -200$$

$$F_{3x} : -100 \cos 60 = -50$$

$$F_{3y} : -100 \sin 60 = -87$$

$$\Sigma F_x : F_{1x} + F_{2x} + F_{3x}$$

$$80 + 0 - 50$$

$$= 30$$

$$\Sigma F_y : 60 - 200 - 87$$

$$= -227$$

$$\Sigma R = \sqrt{\Sigma F_x^2 + \Sigma F_y^2}$$

$$= \sqrt{(30)^2 + (-227)^2}$$

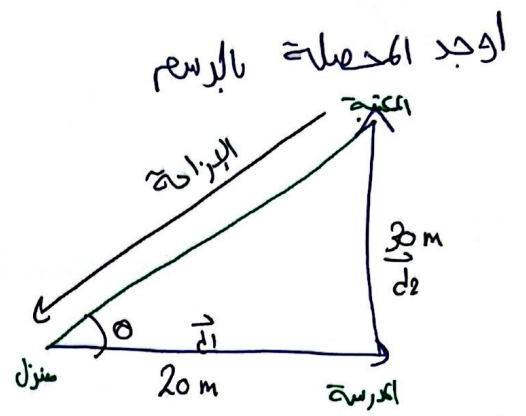
$$= \sqrt{\sim}$$

$$\tan \theta = \frac{\Sigma F_y}{\Sigma F_x}$$

$$\Sigma F_x$$

$$= \frac{-227}{30} \Rightarrow 82.5$$





المسافة $\rightarrow S = 50m + 36 = 86m.$

$$\vec{d} = \sqrt{(20)^2 + (30)^2}$$

$$= \sqrt{400 + 900} = \sqrt{1300}$$

$$= 36m$$

$$\tan \theta = \frac{y}{x} = \frac{30}{20} = 1.5$$

$$\rightarrow \theta = 56.3$$

$$\vec{d} = 0$$