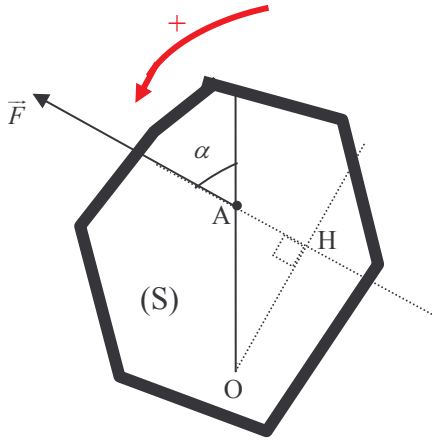


حل التمرين 03



$$M_{\Delta}(\vec{F}) = +F \times OH = 15 \text{ N.m} \quad .1$$

.2

$$M_{\Delta}(\vec{F}) = +F \times OH$$

$$\sin \alpha = \frac{OH}{OA} \Rightarrow M_{\Delta}(\vec{F}) = +F \times OA \sin \alpha$$

$$M_{\Delta}(\vec{F}) = 250 \times 20 \cdot 10^{-2} \times \sin 40^\circ = 32 \text{ N} \quad .3$$

.3

$$M_{\Delta}(\vec{F}) = +F \times OH \Rightarrow F = \frac{M_{\Delta}(\vec{F})}{OH}$$

$$F = \frac{3300}{30 \cdot 10^{-2}} = 11000 \text{ N} \quad .4$$

.4

$$M_{\Delta}(\vec{F}) = +F \times OA \sin \alpha \Rightarrow \sin \alpha = \frac{M_{\Delta}(\vec{F})}{F \cdot OA}$$

$$\sin \alpha = \frac{-69}{300 \times 50 \cdot 10^{-2}} = -0,45 \text{ N} \Rightarrow \alpha = -27^\circ$$

.5

$$M_{\Delta}(\vec{F}) = +F \times OA \sin \alpha \Rightarrow \sin \alpha = \frac{M_{\Delta}(\vec{F})}{F \cdot OA}$$

$$\sin \alpha = \frac{-69}{300 \times 50 \cdot 10^{-2}} = -0,45 \text{ N} \Rightarrow \alpha = -27^\circ$$