DATE

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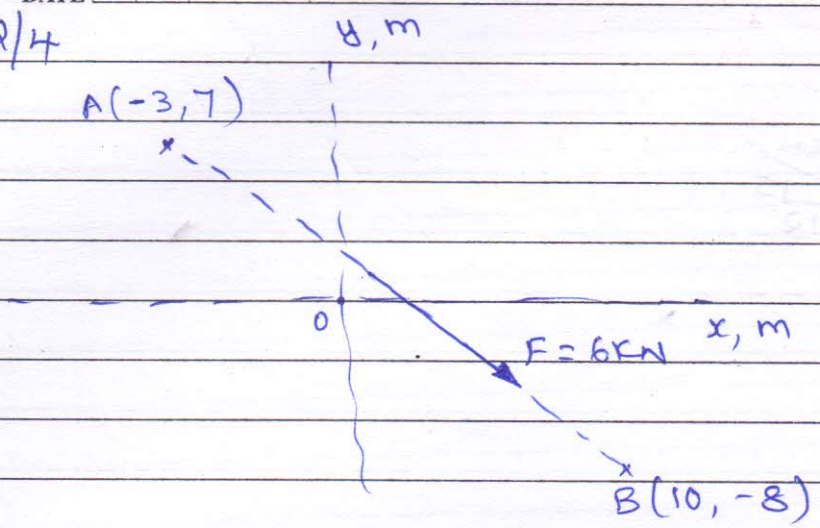

Given

F = 6 KN, line of action

TO find

- unit vector associated with F (n)
- x & y Scalar components of F

Solution

$$n = \frac{(x_2 - x_1)\,i + (y_2 - y_1)\,j}{\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}}$$

$$= \frac{[10 - (-3)]\,i + [(-8 - 7)]\,j}{\sqrt{[10 - (-3)]^2 + [-8 - 7]^2}}$$

$$= \frac{13\,i + (-15)\,j}{\sqrt{13^2 + (-15)^2}}$$

$$= \frac{13i - 15j}{19.85}$$

$$n = 0.655\,i - 0.756\,j$$

$F_x = F \times n_i$

$= 6 \times 0.655 = 3.93$ KN

$F_y = F \times n_j$

$= 6 \times -0.756 = -4.534$ KN

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