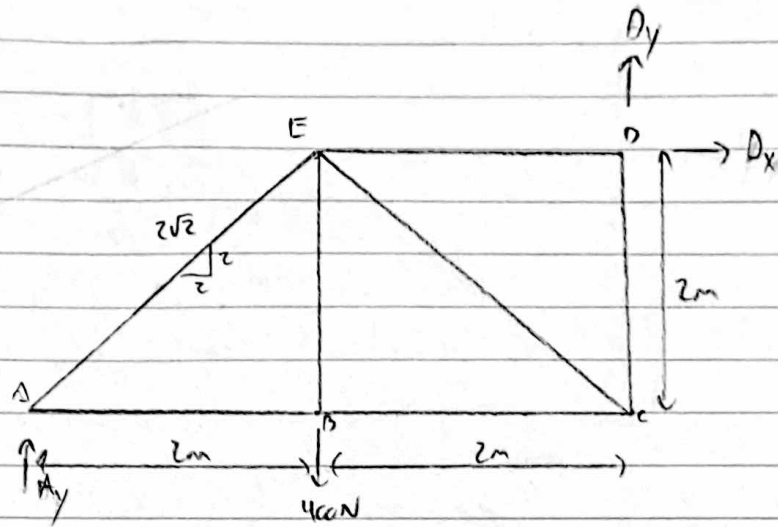


Solutions: 21-5-63-MK-03



find support reactions:

$$\sum M_D = 0: (2m)(400N) - (A_y)(4m) \rightarrow A_y = \frac{(400N)(2m)}{4m} \Rightarrow \boxed{A_y = 200N}$$

$$\sum F_y = 0: 200N - 400N + D_y \Rightarrow \boxed{D_y = 200N}$$

Point A

$$\sum F_y = 0: A_y + \frac{2}{2\sqrt{2}} F_{AE} \Rightarrow F_{AE} = \sqrt{2} A_y \Rightarrow \boxed{F_{AE} = 282.84N}$$

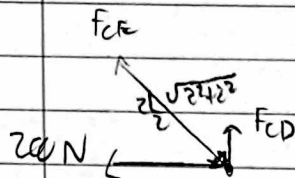
$$\sum F_x = 0: -\frac{2}{2\sqrt{2}} F_{AE} + F_{AB} \Rightarrow F_{AB} = \frac{2}{2\sqrt{2}} 282.84N \Rightarrow \boxed{F_{AB} = 200N}$$

Point B

$$\boxed{F_{BE} = 400N \text{ Tension}}$$

$$\boxed{F_{BC} = 200N \text{ Tension}}$$

Point C



$$\sum F_x = -200\text{ N} + \frac{2}{\sqrt{2}} F_{CE} \Rightarrow F_{CE} = \sqrt{2} (200\text{ N}) = \boxed{282.8\text{ N}}$$

$$\sum F_y = F_{CD} - \frac{2}{\sqrt{2}} F_{CE} \rightarrow F_{CD} = 200\text{ N}$$

Point D

$$\sum F_x = 0 = D_x - F_{DE} \rightarrow \boxed{F_{DE} = 0}$$