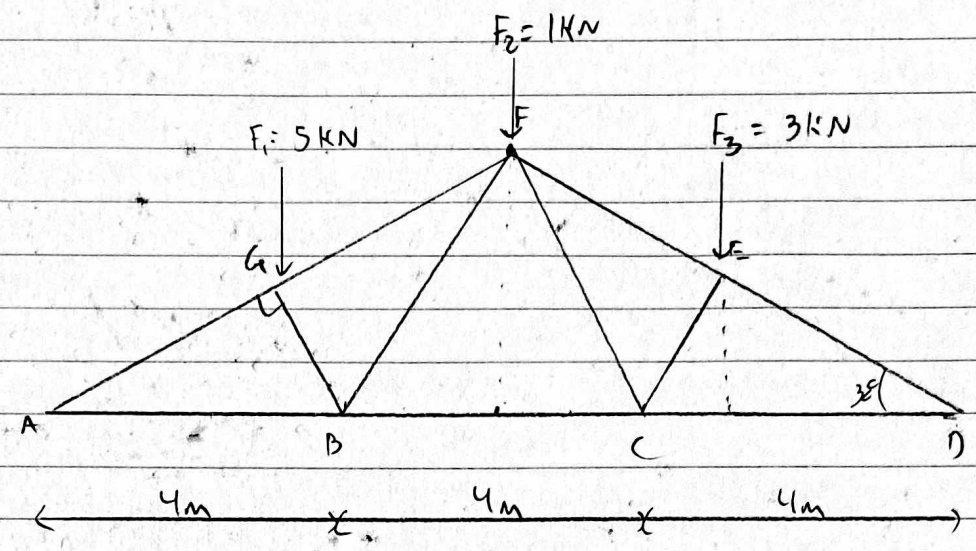
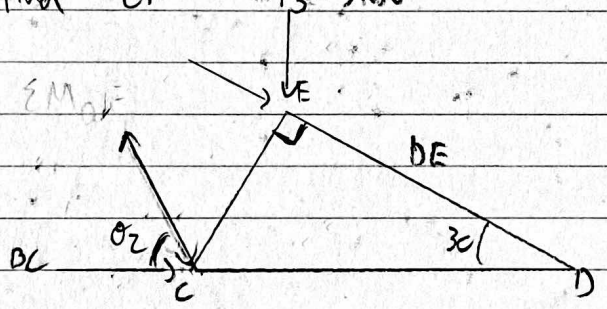
Solutions: 21-5-6.4-MK-04



find CF



$h_2 = \tan(30)6m = 3.464\,m$

$\theta_2 = \tan^{-1}\left(\frac{3.464_m}{2m}\right) = 60^\circ$

$\cos\theta = \frac{a}{H} \rightarrow DE = (4m)(\cos 30) \rightarrow 3.464m$

$DE_x = 3.464m(\cos 30) = 3m$

$\Sigma M_D : 0 = (3kN)(3m) - CF\,(4m)\sin 60$

$CF = \frac{(3kN)(3m)}{4\sin 60} \rightarrow$ **CF = 2.598 kN tension**