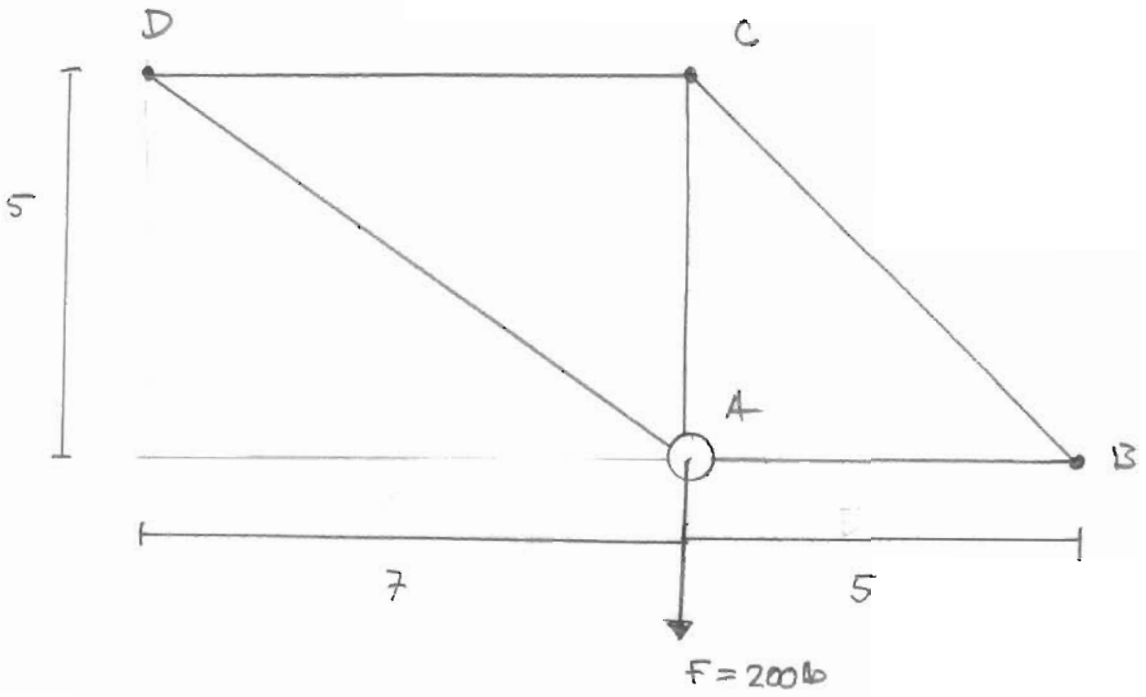
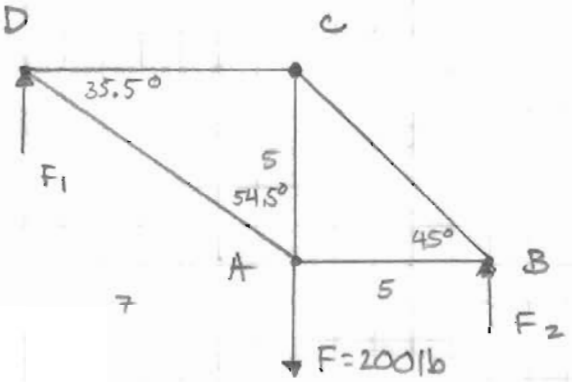
# HPPV DESIGN




22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS
CAMPUS

Given




Find:

1) Find the forces on each member

$\Sigma F_y = F_1 + F_2 - 200 = 0$

Solution:

$\Sigma M_B = 0 = 200 \cdot 5 - F_1 \cdot 12$

$F_1 = 83.33$ , $F_2 = 116.66$

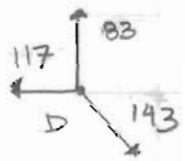
Joint D

$\Sigma F_y = 83.33 - F_{DA} \sin(35.5) = 0$

$F_{DA} = 143.36$

$\Sigma F_x = -F_{DC} + 143.36 \cos(35.5) = 0$

$F_{DC} = 116.66$



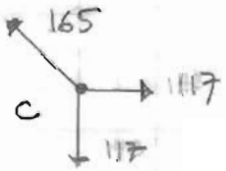

Joint C

$\Sigma F_x = 116.66 + F_{CB} \cos 45°$

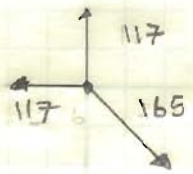
$F_{CB} = -165.46$

$\Sigma F_y = -F_{CA} + 165.46 \sin 45° = 0$

$F_{CA} = +116.66$



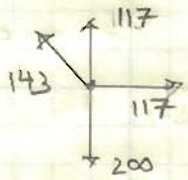
## Joint B



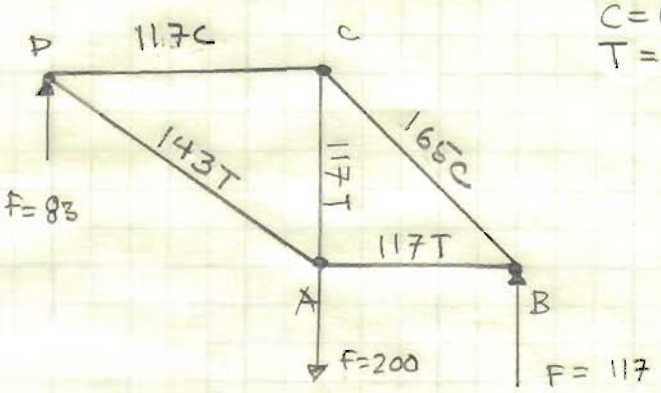

$\Sigma F_x = -F_{AB} + 165 \cos 45°$

$F_{AB} = +116.66$

## Joint A




$F_{CA} = -F_{AC}$ from Joint C calculations




C = Compression
T = Tension

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS
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