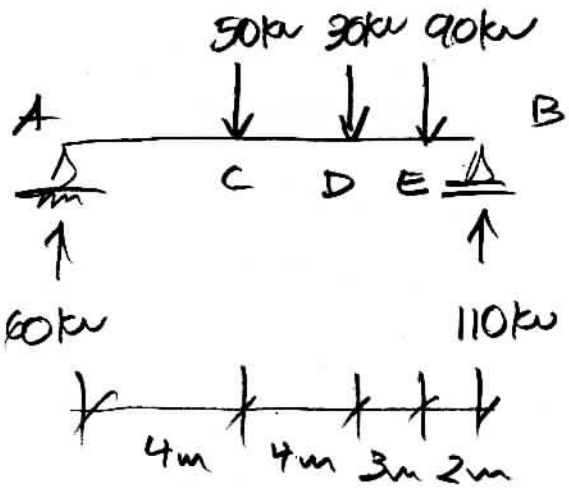
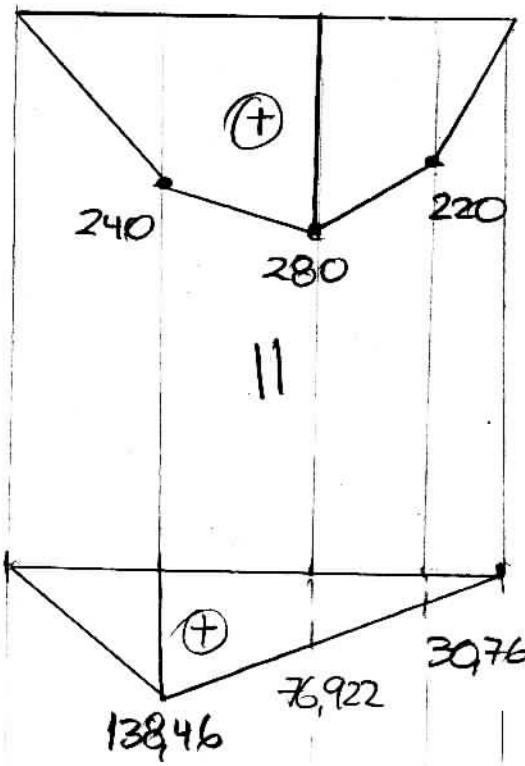
TE1-3.9

(—)



(M)

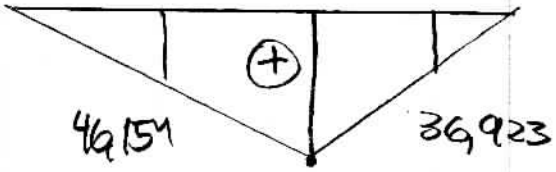


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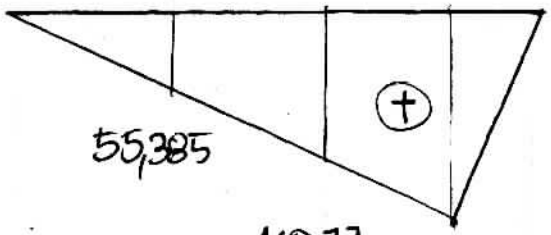
(Mc)

+

(MD)



+



Carga C:

$M_C' = \frac{Pab}{L} = \frac{50 \times 4 \times 9}{13} = 138,46 \text{ kNm}$

$M_D' = \frac{138,46}{9} \times 5 = 76,922 \text{ kNm}$

$M_E' = \frac{138,46}{9} \times 2 = 30,769 \text{ kNm}$

Carga D:

$M_D'' = \frac{Pab}{L} = \frac{30 \times 8 \times 5}{13} = 92,308 \text{ kNm}$

$M_E'' = \frac{92,308}{5} \times 2 = 36,923 \text{ kNm}$

$M_C'' = \frac{92,308}{8} \times 4 = 46,154 \text{ kNm}$

Carga E:

$M_E''' = \frac{Pab}{L} = \frac{90 \times 11 \times 2}{13} = 152,31 \text{ kNm}$

$M_C''' = \frac{152,31}{11} \times 4 = 55,385 \text{ kNm}$

$M_D''' = \frac{152,31}{11} \times 8 = 110,77 \text{ kNm}$

VERIFICAÇÃO DA SOLUÇÃO COM CÁLCULO DOS MOMENTOS NOS PONTOS C, D E E:

$M_C = 60kN \times 4m = 240 kNm$

$M_D = 60kN \times 8m - 50kN \times 4m = 280 kNm$

$M_E = 60kN \times 11m - 50kN \times 7m - 30kN \times 3m = 220 kNm$