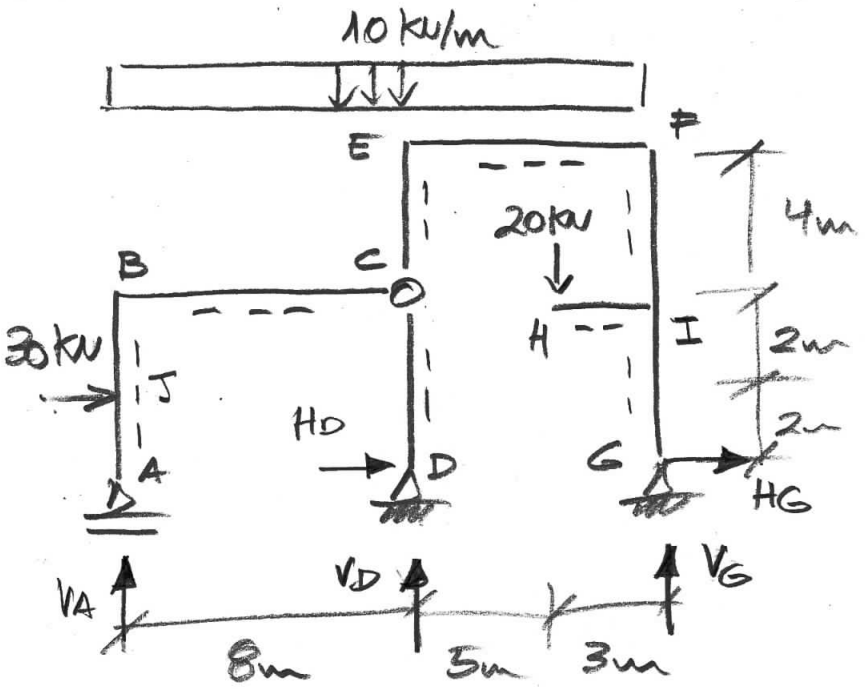
TE1-6a.5



$\Sigma M_C^{\curvearrowright A} = 0$ ↺

$-V_A \times 8m + 30kN \times 2m + 10\frac{kN}{m} \times (8m)^2/2 = 0$

$V_A = \frac{1}{8}(60 + 5 \times 8^2)$

$V_A = 47{,}5\ kN \uparrow$

$\Sigma M_C^{\curvearrowright D} = 0$ ↺

$\therefore H_D = 0$

$\Sigma F_H = 0 \rightarrow \quad 30kN + H_G + H_D = 0$

$H_G = +30\ kN \leftarrow$

$\Sigma M_C^{\curvearrowright G} = 0$ ↺ $\quad V_G \times 8m - 30kN \times 4m - 20kN \times 5m - 10\frac{kN}{m} \times (8m)^2/2 = 0$

$V_G = \frac{1}{8}(120 + 100 + 5 \times 64) = 67{,}5\ kN \uparrow$

$\Sigma F_V = 0 \uparrow \quad 47{,}5kN + V_D + 67{,}5kN - 20kN - 10\frac{kN}{m} \times 16m = 0$

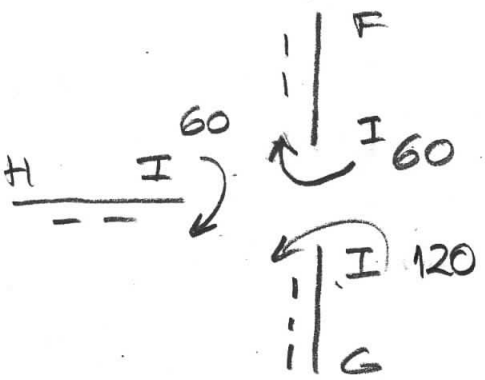
$V_D = 20 + 160 - 47{,}5 - 67{,}5 = 65\ kN \uparrow$

$M_B = -30kN \times 2m = -60\ kNm$

$M_I^{GI} = -30kN \times 4m = -120\ kNm$

$M_I^{HI} = -20kN \times 3m = -60\ kNm$

$$M_I^{IF} = -30kN \times 4m + 20kN \times 3m = -60kNm$$



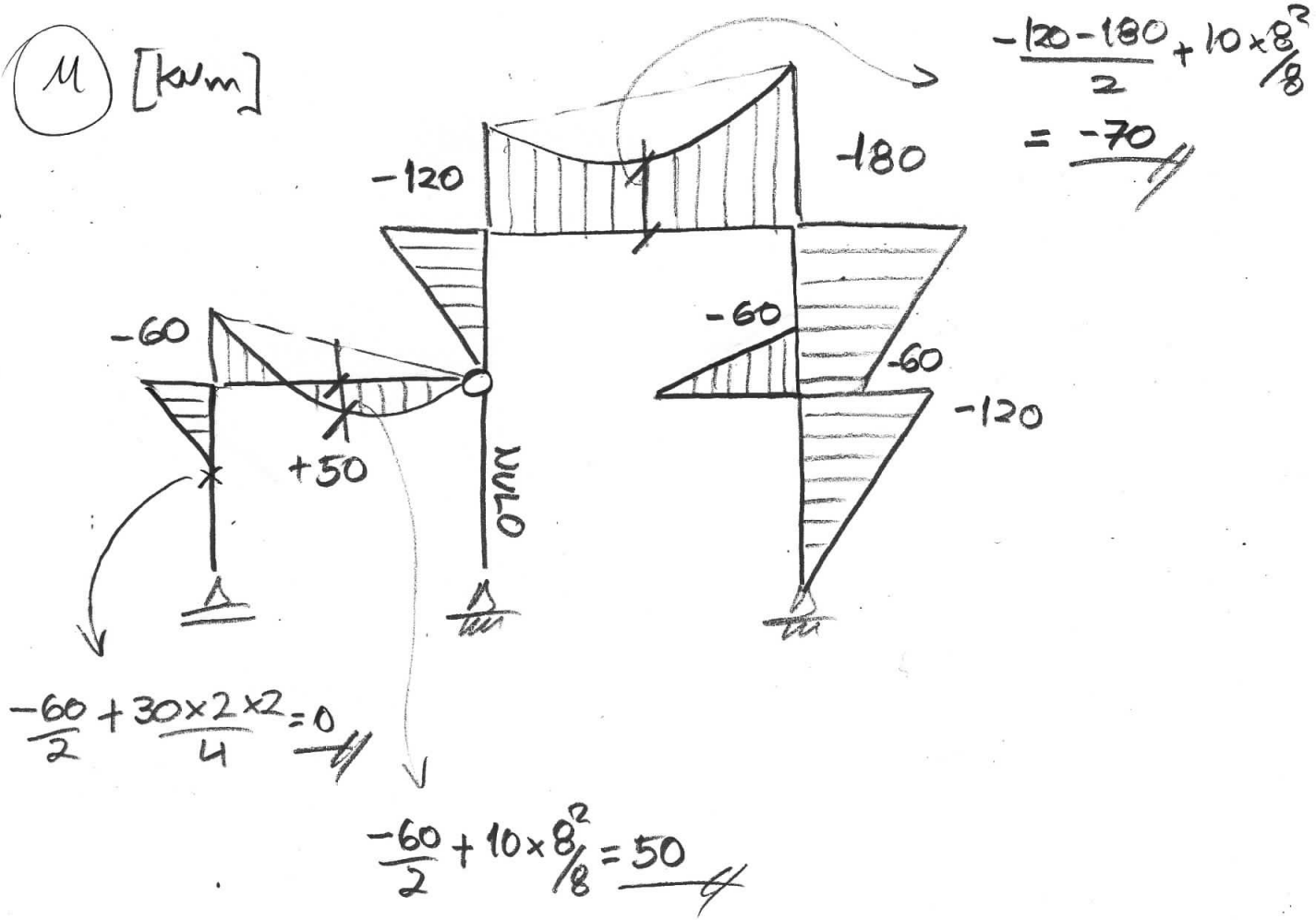
$$M_F = -30kN \times 8m + 20kN \times 3m$$

$$M_F = -180kNm$$

$$M_E = -10\,kN/m \cdot \frac{(8m)^2}{2} - 20kN \times 5m + 67.5kN \times 8m - 30kN \times 8m$$

$$M_E = -5.64 - 100 + 540 - 240 = -120\,kNm$$

(M) [kNm]



$$\frac{-120-180}{2} + 10 \times \frac{8^2}{8} = -70$$

$$\frac{-60}{2} + \frac{30 \times 2 \times 2}{4} = 0$$

$$\frac{-60}{2} + 10 \times \frac{8^2}{8} = 50$$