

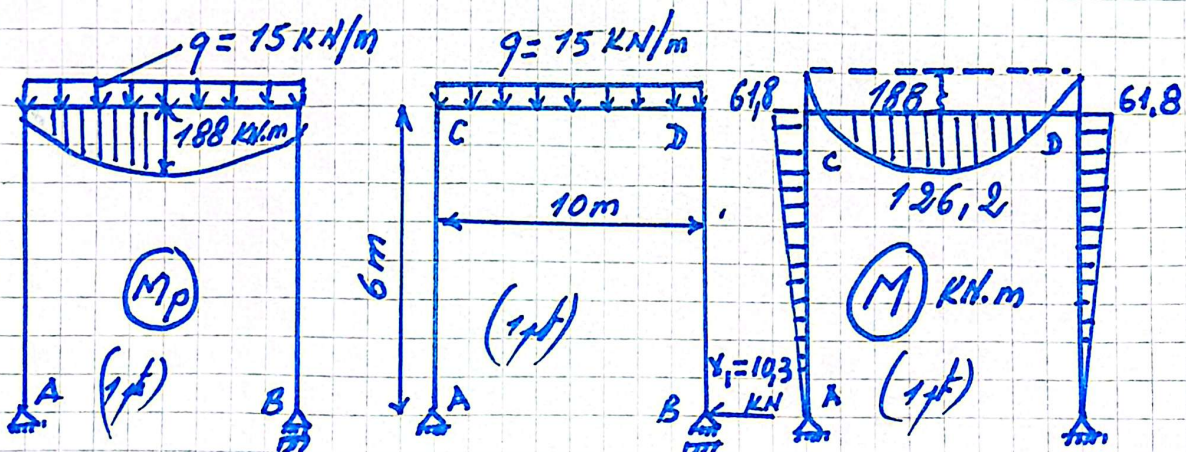
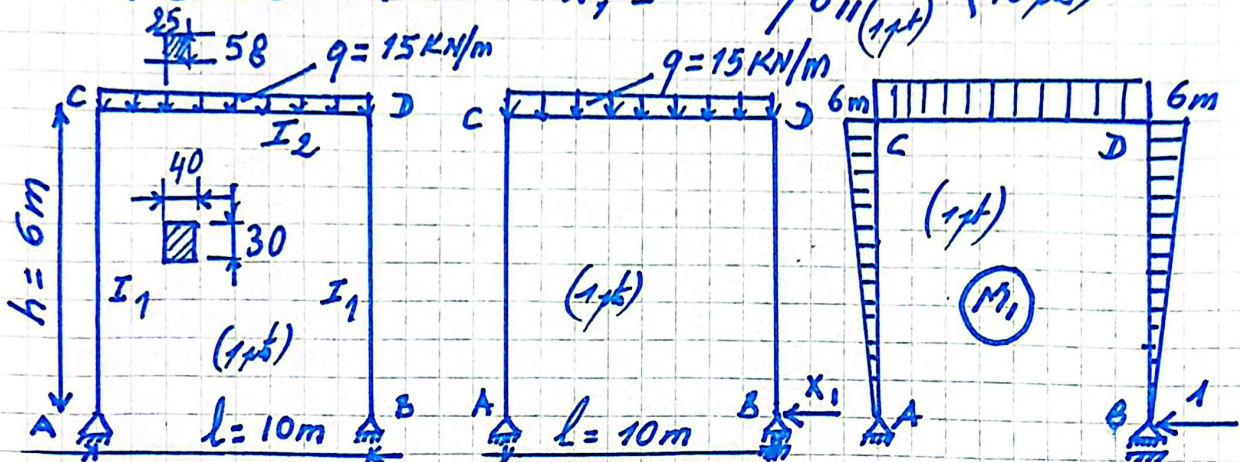
Université Abba LAGHROUR KHENCHOU  
FACULTE DES SCIENCES ET DE LA  
TECHNOLOGIE  
DÉPARTEMENT DE GENIE CIVIL.

3<sup>e</sup> année Genie Civil (2<sup>e</sup> Semestre)

Module: CALCUL DES STRUCTURES.

CORRECTION DE L'EXAMEN

EXERCICE N° 1:  $X_1 = -\Delta_{1P}/\delta_{11}$  (1 pt) (10 pts)



$$\delta_{11} = \frac{1/2 \cdot 6 \cdot 6 \cdot 4}{EI_1} \cdot 2 + \frac{10 \cdot 6 \cdot 6}{EI_2} = \frac{144}{EI_1} + \frac{360}{2,56 EI_1} = \frac{285}{EI_1} \quad (1 \text{ pt})$$

$$\Delta_{1P} = \frac{-2/3 \cdot 10 \cdot 188 \cdot 6}{EI_2} = \frac{-7520}{2,56 EI_1} = \frac{-2930}{EI_1} \quad (1 \text{ pt})$$

$$\left. \begin{aligned} I_1 &= 0,30 \cdot 0,40^3/12 = 0,0016 \text{ m}^4 \\ I_2 &= 0,25 \cdot 0,58^3/12 = 0,0041 \text{ m}^4 \end{aligned} \right\} \begin{aligned} I_2/I_1 &= 0,0041/0,0016 \\ &= 2,56 \end{aligned} \quad (1 \text{ pt})$$

①/②