Pregunta **1**

No s'ha respost encara

Puntuat sobre 10,00

(a) (4 points) Consider for $h = 3m$ the roof design shown in the figure, the bars are made of a material with Young Modulus = 5.0625e+06N/m^2 and are cylindrical of radius $r = 35cm$. The extrem E from the base of the bridge is fixed and the other one, D, is fixed only in the y-direction. Moreover, downwards vertical load forces $F_A = 408.32N$, $F_B = F_A/2$ and $F_C = F_A/4$ are applied at points **A**, **B** and **C** respectively.

Compute the y-displacement at point **A**.

Hint: The x-displacement on point D is -4.8001e-02.

- -4.0750e-02
- Leave it empty (no penalty)
- -1.8875e-02
- -3.9845e-02
- -5.0860e-02

(b) (3 points) Compute the y-reaction force at point D.

- Leave it empty (no penalty)
- 3.0281e+02
- 2.8131e+02
- 5.1995e+02
- 3.8280e+02

(c) (3 points) Each element undergoes a strain, which is the quotient $\frac{\Delta L}{L}$, where L is the length of the element before the deformation and $\Delta L = |L - L_{deform}|$ the variation of this length after deformation (in absolute value).

Find the maximal strain suffered by any element in the structure.

Hint: The strain for the element AF is 3.6677e-04

- 1.2708e-03
- Leave it empty (no penalty)
- 1.1386e-03
- 6.4313e-04
- 4.8542e-05

Torna a començar | Desa | Emplena amb les respostes correctes | Envia i acaba | Tanca la previsualització

Informació tècnica

Comportament que s'està utilitzant: Retroalimentació diferida

Fracció mínima: -0.25

Fracció màxima: 1

Variant de pregunta: 1

Resum de la pregunta: (a) (4 points) Consider for \(h=3m\) the roof design shown in the figure, the bars are made of a material with Young Modulus = 5.0625e+06\(N/m^2\) and are