Pregunta **1**

No s'ha respost encara

Puntuat sobre 10,00

Consider the domain shown above with the three finite elements, nodes and local and global numbering plotted there (length units in m).The domain is made of an elastic material with Young Modulus $E = 10^8 \frac{N}{m^2}$, Poisson ratio $\nu = 0.24$ and thickness $th = 5cm$. The piece is fixed in the all left boundary and on two right edge boundaries (see figure) an horizontal distributed load $[139201; 0] \frac{N}{m^2}$ is applied

(a) (4 points) The value of K_{58} of the global stiffness matrix K is

- -1.2824e+06
- -5.5821e+05
- Leave it empty (no penalty)
- -1.7540e+05
- -9.3330e+05

Hint1: the value of K_{34} is -1.5700e+06

(b) (3 points) The value of the x displacement of global node 5 is

- 6.0377e-02
- 3.9256e-02
- 3.1192e-02
- 2.7144e-02
- Leave it empty (no penalty)

Hint2: The value of the y displacement of node 5 is -9.6602e-03

(c) (3 points) Now suppose that, besides the load, it is taken into account the own weight of the piece. If the density of the material is $\rho = 1 \frac{Kg}{m^3}$ and $g = 9.8 \frac{m}{s^2}$, the value of the VonMisses stress of the third node is

- 1.3030e+06
- 4.7816e+04
- Leave it empty (no penalty)
- 9.1378e+05
- 1.4540e+05

Hint3: The value of the VonMisses stress of the first node is 9.9229e+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: Consider the domain shown above with the three finite elements, nodes and local and global numbering plotted there (length units in m).The domain is made of

an elastic material with Young Modulus \(E=10^8 \frac {N}{m^2}\), Poisson ratio \(\nu =0.24\) and thickness \(th=5 cm\). The piece is fixed in the all left boundary and on two right edge boundaries (see figure) an horizontal distributed load \([139201;0] \frac {N}{m^2}\) is applied (a) (4 points) The value of \(K_{58}\) of the global stiffness matrix \(K\) is {-1.2824e+06; -5.5821e+05; Leave it empty (no penalty); -1.7540e+05; -9.3330e+05} Hint1: the value of \(K_{34}\) is -1.5700e+06 (b) (3 points) The value of the \(x\) displacement of global node \(5\) is {6.0377e-02; 3.9256e-02; 3.1192e-02; 2.7144e-02; Leave it empty (no penalty)} Hint2: The value of the \(y\) displacement of node \(5\) is -9.6602e-03 (c) (3 points) Now suppose that, besides the load, it is taken into account the own weight of the piece. If the density of the material is \(\rho =1 \frac {Kg}{m^3}\) and \(g=9.8 \frac {m}{s^2}\), the value of the VonMisses stress of the third node is {1.3030e+06; 4.7816e+04; Leave it empty (no penalty); 9.1378e+05; 1.4540e+05} Hint3: The value of the VonMisses stress of the first node is 9.9229e+05

Resum de la resposta correcta: part 1: -9.3330e+05; part 2: 3.1192e-02; part 3: 1.3030e+06

Resum de respostes:

Estat de la pregunta: todo

Download this question in Moodle XML format

Contreu-ho tot

Opcions de l'intent

Com es comporten les preguntes

Retroalimentació diferida

Puntuat sobre

10

Torna a començar amb aquestes opcions

Opcions de visualització

Si és correcte

Mostrat

Puntuacions

Mostra la puntuació i el màxim

Xifres decimals en les puntuacions

2

Retroacció específica

Mostrat

Retroacció general

Mostrat

Resposta correcta

Mostrat

Historial de les respostes

No es mostra

Actualitza les opcions de visualització