

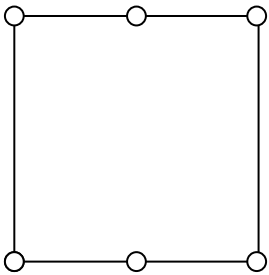
Time: 180 minutes
試卷隨答案卷繳回

Total 100%

Part I (20%)

briefly

—
 L_2



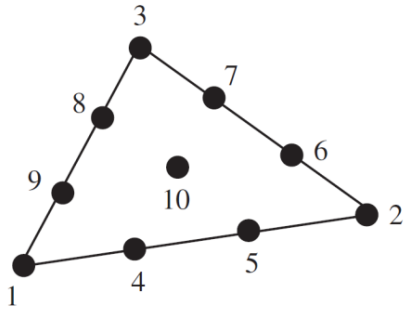
$$N_i(\xi, \eta) = \sum_{j=1}^4 \phi_j(\xi, \eta)$$

N_i

h_i

i

N_7

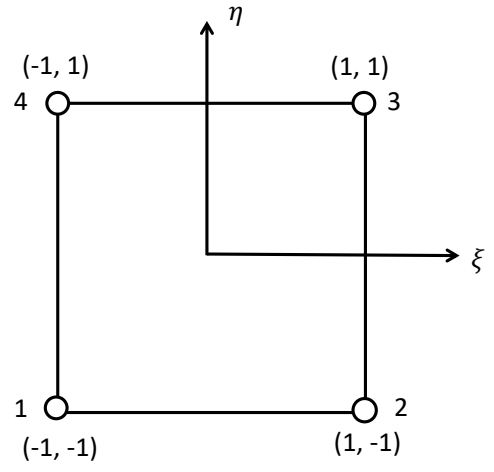
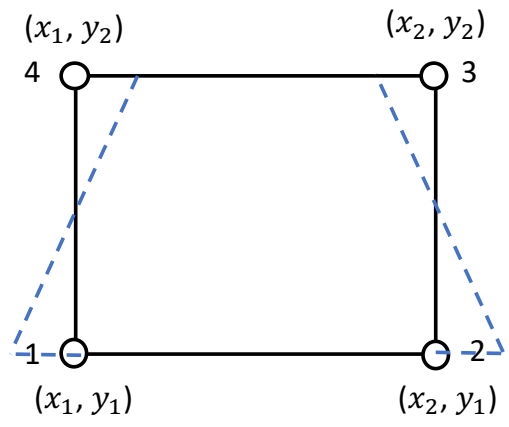


Part II (80%)

$$\begin{bmatrix} -c & 0 & c & 0 & -c & 0 & c & 0 \end{bmatrix}$$

$$\begin{matrix} x & y \\ \xi & \eta \\ u_x & u_y \\ \varepsilon_x & \varepsilon_y & \gamma_{xy} \end{matrix}$$

$$\xi = \eta = 0 \quad \xi = \eta = \frac{1}{\sqrt{3}}$$



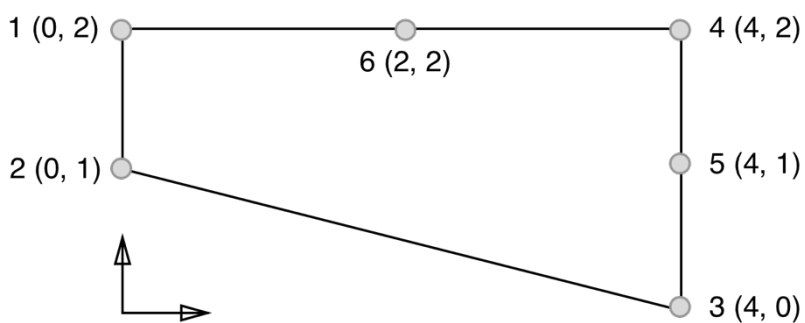
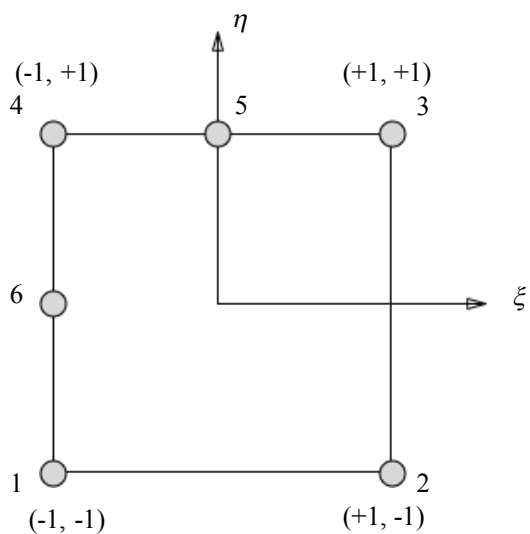
$$N_i(\xi, \eta)$$

$$\sum_{i=1}^6 N_i(\xi, \eta) = 1$$

$$\frac{\partial N_2}{\partial x} \quad \frac{\partial N_5}{\partial y}$$

$$\frac{\partial N_6}{\partial x} \quad \xi \quad \eta$$

$$\xi = \frac{1}{2} \quad \eta = \frac{1}{4}$$



\gg

B

P

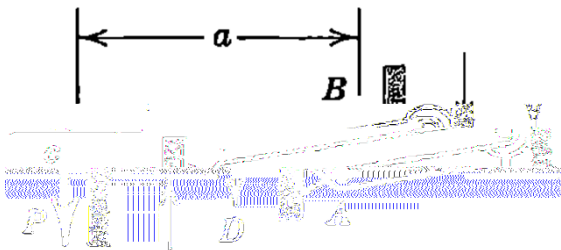
D

L

$$L^2 = a^2 + c^2$$

$$\frac{EA}{L}$$

$$\Pi = \frac{EA}{8a^3} (D^2 - 2cD)^2 - PD$$



α

(x, y)

r

(ξ, η)

r

hints:

