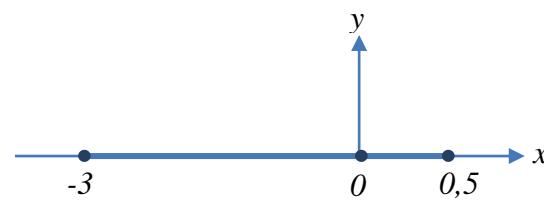
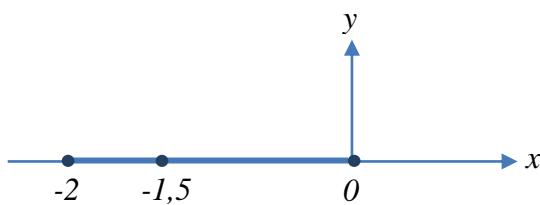
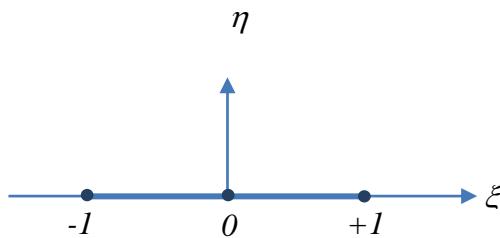


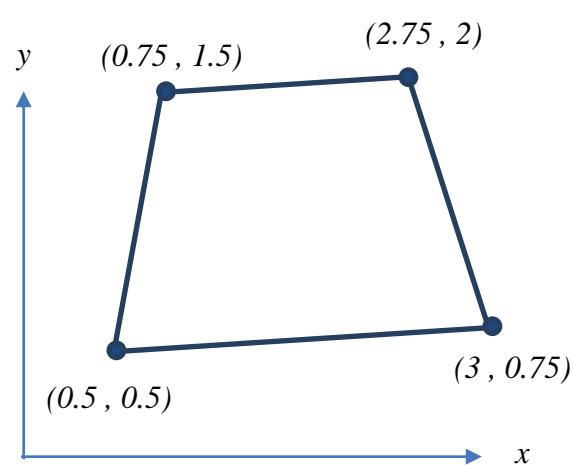
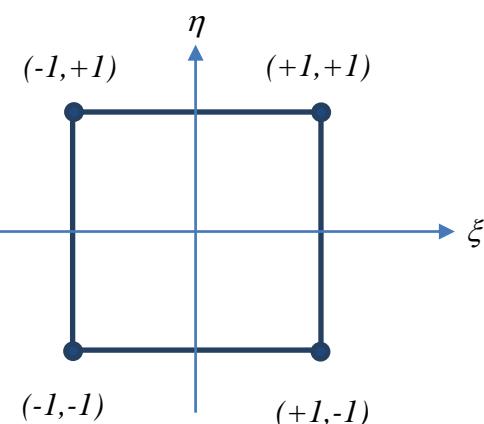
### EXERCICE 1

Donner les fonctions de formes ainsi que la relation géométrique entre les coordonnées  $(x, y)$  et  $(\xi, \eta)$  permettant le passage de l'élément de référence aux éléments physiques.

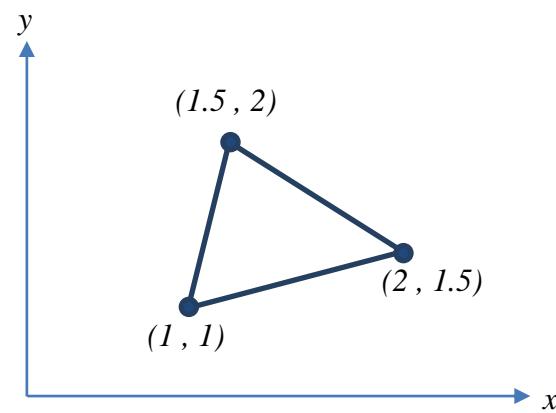
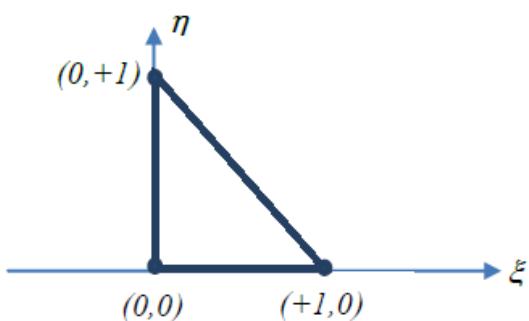
1.



2.



3.



## EXERCICE 2

Donner les fonctions de forme d'un élément quadrangulaire de dimension  $a \times b$  à 06 nœuds placés selon le schéma indiqué ci-dessous.

- Utiliser la méthode des polynômes de Lagrange.

