

Please show your work and draw a box around your answer to receive full credit.

- 1) Chapter 7, Problem 6.
- 2) For a quadratic triangular element, show that its six shape functions are equal to unity at their respective node and zero at all of the other nodes.
- 3) Use MATLAB and write an M-file to evaluate the stiffness matrix for the element shown in Figure 1 using isoparametric formulation. Let $E = 30 \times 10^6$ psi and $\nu = 0.25$. Assume a thickness of 1 in.

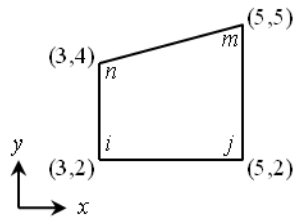


Figure 1. Quadrilateral element