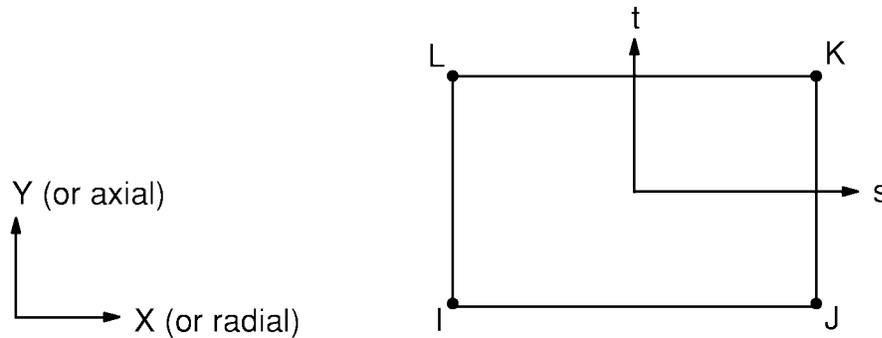


# 14.79 FLUID79 — 2-D Contained Fluid



Matrix or Vector	Geometry	Shape Functions	Integration Points
Stiffness Matrix	Quad	Equations (12.6.5-1) and (12.6.5-2)	1 x 1 for bulk strain effects and 2 x 2 for shear and rotational resistance effects
	Triangle	Equations (12.6.1-1) and (12.6.1-2)	1 x 1 for bulk strain effects and 3 for shear and rotational resistance effects
Mass Matrix	Same as stiffness matrix. Matrix is diagonalized as in Section 13.2.		Same as for shear effects
Damping Matrix	Same as stiffness matrix.		Same as for shear effects
Temperature Load Vector	Same as stiffness matrix		1 x 1
Pressure Load Vector	Same as stiffness matrix, specialized to the face		2

Load Type	Distribution
Element Temperature	Average of the four nodal temperatures is used throughout the element
Nodal Temperature	Same as element temperature distribution
Pressure	Linear along each face

### 14.79.1 Other Applicable Sections

Chapter 2 describes the derivation of element matrices and load vectors. The fluid aspects of this element are the same as described for FLUID80 (Section 14.80). Section 13.1 describes integration point locations.