FIGURE 2.1
Truss examples: (a) Montreal Biosphere Museum (http://en.wikipedia.org/wiki/Montreal_Biosph%C3%A8re).
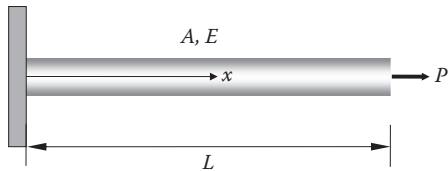(b) Betsy Ross Bridge (http://en.wikipedia.org/wiki/Betsy_Ross_Bridge).

002x001.tif

FIGURE 2.2
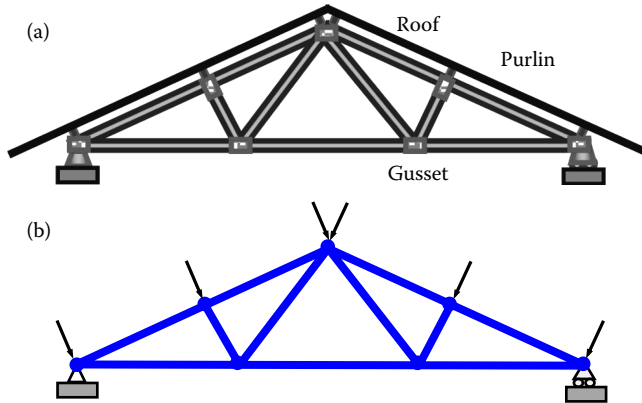An axially loaded elastic bar.

002x002.eps

FIGURE 2.3
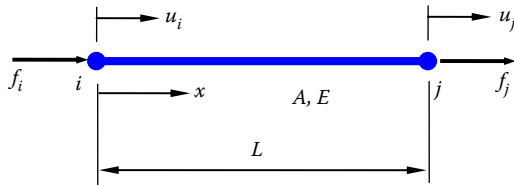Modeling of a planar roof truss: (a) Physical structure. (b) Discrete model.
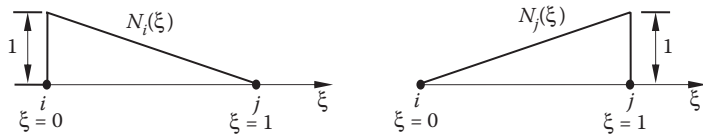
FIGURE 2.4
Notation for a bar element.

FIGURE 2.5
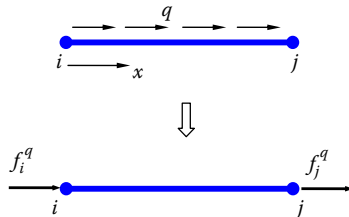The shape functions for a bar element.

FIGURE 2.6
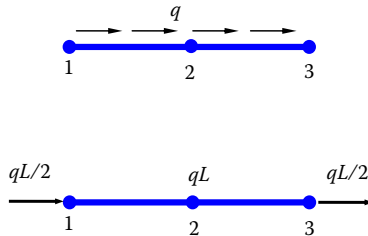Conversion of a distributed load on one element.

FIGURE 2.7
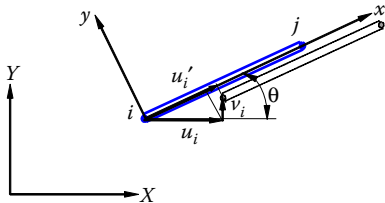Conversion of a distributed load with constant intensity q on two elements.

FIGURE 2.8
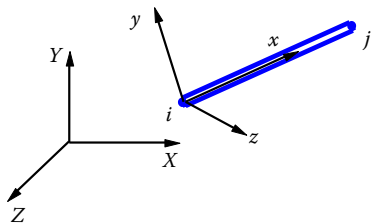Local and global coordinates for a bar in 2-D space.

FIGURE 2.9
Local and global coordinates for a bar in 3-D space.