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6.3 Starting with the general expression (6.1.7), explicitly develop forms (6.1.9) and (6.1.10) for the strain energy density.

6.8 Verify the decomposition of the strain energy into volumetric and deviatoric parts as given by equations (6.1.16) and (6.1.17).

6.16 Rework Example 6.2 using the trigonometric Ritz approximation $w_j = \sin\frac{j\pi x}{l}$. Develop a two-term approximate solution, and compare it with the displacement solution developed in the text. Also compare each of these approximations with the exact solution (6.7.9) at midspan $x = l/2$.