

COVER SHEET

- HW is to be turned in with the cover sheet filled out and signed.
- HW is due before class one week after it is handed out.
- Use the systematic solution technique presented in class.

I have completed this assignment on my own. I did not *copy* the solutions from anyone or any other source.

I collaborated on this assignment with:

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\_\_\_\_\_

\_\_\_\_\_

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I looked at the solutions from other sources after I worked on the problem and made the necessary corrections.

Signature: \_\_\_\_\_

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*No member of this class shall take unfair advantage of any other member in this class.*

## Homework

Due: Wednesday October 21, 2009

1.

A thin-walled pressure vessel of 60-mm radius and 4-mm thickness is made from spirally welded pipe and fitted with two rigid end plates (Fig. P1.38). The vessel is subjected to an internal pressure of  $p = 2$  MPa and a  $P = 50$  kN axial load. Calculate (a) the normal stress perpendicular to the weld; (b) the shearing stress parallel to the weld.

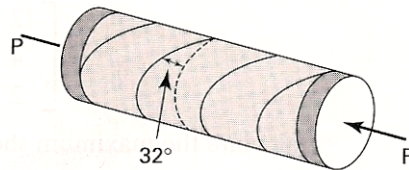


FIGURE P1.38.

2.

A structural member is subjected to a set of forces and moments. Each separately produces the stress conditions at a point shown in Fig. P1.26. Determine the principal stresses and their orientations at the point under the effect of combined loading.

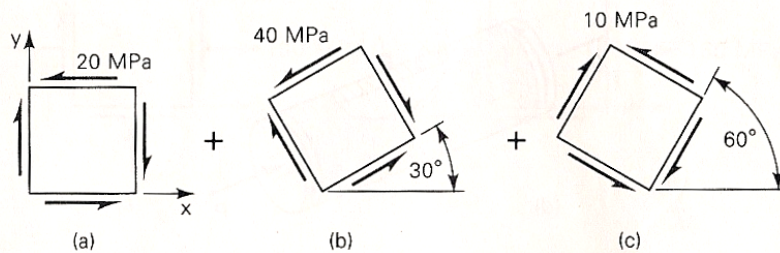


FIGURE P1.26.

**References:** Ugural and Fenster (2003)