

## Problem 3B.13

**Flow of a fluid through a sudden contraction.**

- (a) An incompressible liquid flows through a sudden contraction from a pipe of diameter  $D_1$  into a pipe of smaller diameter  $D_2$ . What does the Bernoulli equation predict for  $\mathcal{P}_1 - \mathcal{P}_2$ , the difference between the modified pressures upstream and downstream of the contraction? Does this result agree with experimental observations?
- (b) Repeat the derivation for the isothermal horizontal flow of an ideal gas through a sudden contraction.