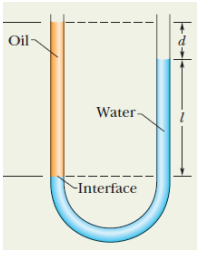
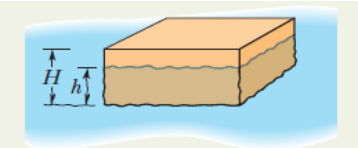
Chapter 11
Example Problems

1. The U-tube in the figure to the right contains two liquids in static equilibrium: Water of density 998 kg/m^3 is in the right arm and oil of an unknown density is in the left. Measurements give l = 135 mm and d = 12.3 mm. What is the density of the oil?



2. A manometer is used to measure the pressure in a tank. The fluid has a density of 850.0 kg/m^3 and the manometer column height is 55 cm. If the local atmospheric pressure is 96 kPa, determine the absolute pressure within the tank.

3. In the figure, a block of density 900 kg/m^3 floats face down in a fluid of density 1200 kg/m^3. The block has a height H = 6.0 cm.



   a. By what depth h is the block submerged?
   b. If the block is held fully submerged and the released, what is the magnitude of its acceleration?