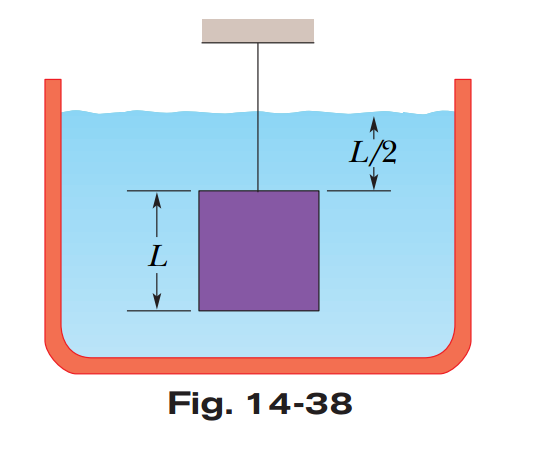
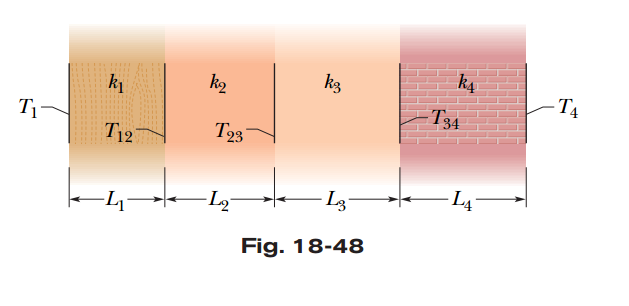
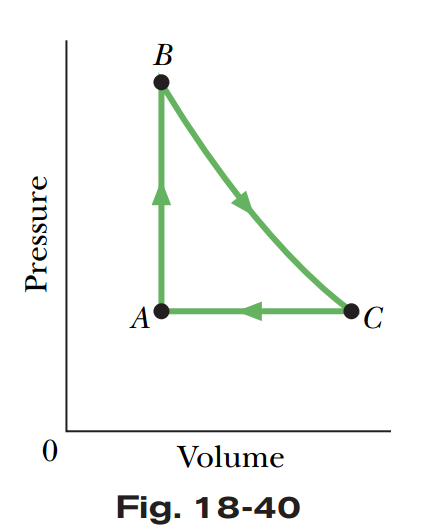
TEST 2

1. In Fig. 14-38, a cube of edge length and mass is suspended by a rope in an open tank of liquid of density . Find (a) the magnitude of the total downward force on the top of the cube from the liquid and the atmosphere, assuming atmospheric pressure is , (b) the magnitude of the total upward force on the bottom of the cube, and (c) the tension in the rope.
2. In a small room, people put a rice bag with mass in a chair with legs and its mass is . Find the pressure at the interface of floor and a chair leg, each of chair leg has dimention
3. A small electric immersion heater is used to heat of water for a cup of instant coffee. The heater is labeled “” (it converts electrical energy to thermal energy at this rate). Calculate the time required to bring all this water from to , ignoring any heat losses.
4. Figure 18-48 shows (in cross section) a wall consisting of four layers, with thermal conductivities,, and (k2 is unknown). The layer thicknesses are, , and ( is unknown). The known temperatures are , and . Energy transfer through the wall is steady. What is interface temperature ?
5. Gas held within a chamber passes through the cycle shown in Fig. 18-40. Determine the energy transferred by the system as heat during process if the energy added as heat during process is , no energy is transferred as heat during process , and the net work done during the cycle is .