

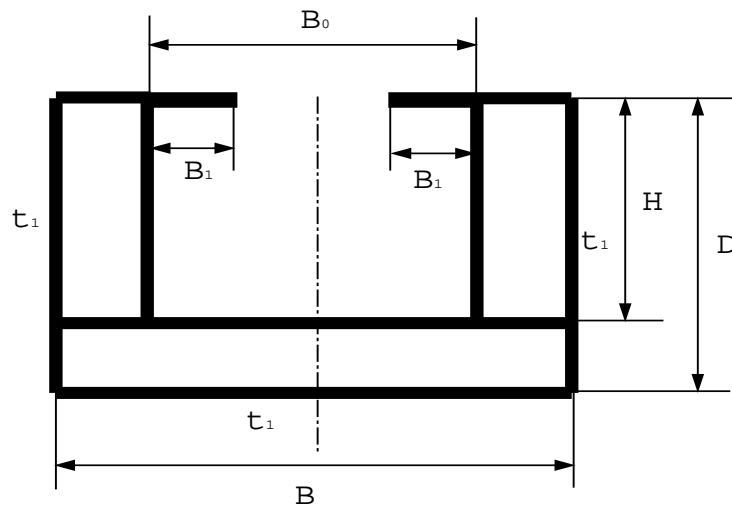
**MASSACHUSETTS INSTITUTE OF
TECHNOLOGY
Problem Set 11**

**Assigned : Nov. 13, 2002
Due : Nov. 20, 2002**

14.42, 14.46 and the problem below.

1. A typical cross section of an idealized ship is shown in Figure 1. If the ship is subjected to a torque of $4 \times 10^6 N \cdot m$ about the longitudinal axis, compute
 - (a) the shear stress distribution on the cross section.
 - (b) the magnitude and location of maximum shear stress.

Here, the shear modulus is $G = 1.2 \times 10^{11} Pa$.



$B = 25m$ $D = 15m$ $H = 10m$
 $B_0 = 15m$ $t_1 = 20mm$ $t_2 = 16mm$
 $B_1 = 3m$
 The thickness is t_2 unless mentioned.

Figure 1: A diagram for problem 1