(a) Problem 14.4
(b) Problem 14.18
(c) Problem 14.42
(d) Problem 14.46

(e) A typical cross section of an idealized ship is shown in Figure 1. If the ship is subjected to a torque of $3 \times 10^6$ N•m about the longitudinal axis, compute

1. The shear stress distribution on the cross section.
2. The magnitude and location of maximum shear stress.

Here, the shear modulus is $G=1 \times 10^{11}$ Pa.
Figure 1

B = 20m  \hspace{1cm} D = 15m  \hspace{1cm} H = 10 \text{ m}  \hspace{1cm} B_1 = 3m
B_0 = 15m  \hspace{1cm} t_1 = 20\text{mm}  \hspace{1cm} t_2 = 16\text{mm}