PROB. 9.49

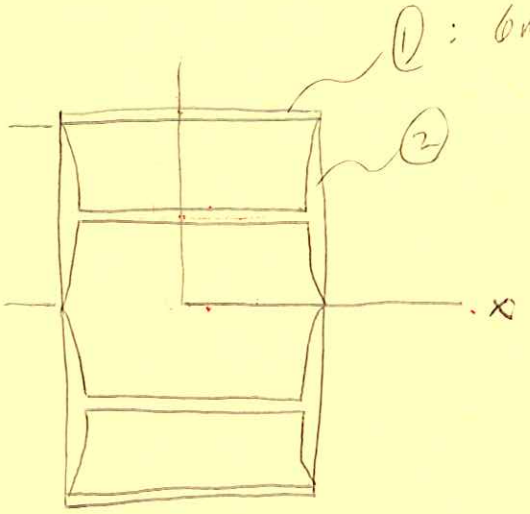
$$(I_y)_1 = \frac{1}{12} b^3 h = \frac{1}{12}(160)^3(20) = 6.83 \times 10^6 \text{ mm}^4$$

$$(I_y)_3 = 6.83 \times 10^6 \text{ mm}^4$$

$$(I_y)_2 = 3.9 \times 10^6 \text{ mm}^4$$

$$I_y = (I_y)_1 + (I_y)_2 + (I_y)_3 = 1.76 \times 10^7 \text{ mm}^4$$

PROB. 9.50



$$(I_x)_1 = 2\left[\frac{1}{12} bh^3 + Ad^2\right]$$

$$= 2\left[\frac{1}{12}(203\text{mm})(6\text{mm})^3 + (203)(6)\left(\frac{203}{2} + 3\right)^2\right]$$

$$(I_x)_1 = 1.03 \times 10^8 \text{ mm}^4$$

$$(I_x)_2 = 2\left[\bar{I}_x + Ad^2\right]$$

$$= 2\left[15.44 \times 10^6 + (5890)\left(\frac{203}{2}\right)^2\right]$$

PROB. 9.50

$$(I_x)_2 = 1.52 \times 10^8 \text{ mm}^4$$

$$I_x = (I_x)_1 + (I_x)_2 = 2.55 \times 10^8 \text{ mm}^4$$

$$(I_y)_1 = 2\left[\frac{1}{12} b^3 h\right]$$

$$= 2\left[\frac{1}{12}(203)^3(6)\right]$$

$$(I_y)_1 = 8.36 \times 10^6 \text{ mm}^4$$

$$(I_y)_2 = 2(45.8 \times 10^6) = 9.16 \times 10^7 \text{ mm}^4$$

$$I_y = (I_y)_1 + (I_y)_2 = 10^8 \text{ mm}^4$$