Remarks: See §3.2.2, pages 98 till 100
See §3.2.4, example 7, pages 114 till 115

Answers 3.21-1:

a. $I_{yy} = 432 \times 10^3 \text{ mm}^4$
b. $I_{yz} = -311,04 \times 10^3 \text{ mm}^4$

Explanation 3.21-1: (lengths in mm)

$I_{yy} = \left\{\frac{1}{12} \times 60 \times 12^3 + 720 \times 12^2\right\} + \left\{\frac{1}{12} \times 12 \times 60^3 + 720 \times 12^2\right\}$
$I_{yz} = -2 \times \{720 \times 18 \times 12\}$

Answers 3.21-2:

a. $I_{yy} = 276,48 \times 10^3 \text{ mm}^4$
b. $I_{yz} = 155,52 \times 10^3 \text{ mm}^4$

Explanation 3.21-2: (lengths in mm)

$I_{yy} = \left\{\frac{1}{12} \times 60 \times 12^3 + 720 \times 6^2\right\} + \left\{\frac{1}{12} \times 12 \times 60^3 + 720 \times 6^2\right\}$
$I_{yz} = 2 \times \{720 \times 18 \times 6\}$

Answers 3.21-3:

a. $I_{yy} = 1062,72 \times 10^3 \text{ mm}^4$
b. $I_{yz} = 0$

Explanation 3.21-3: (lengths in mm)

$I_{yy} = 2 \times \left\{\frac{1}{12} \times 60 \times 12^3 + 720 \times 24^2\right\} + \left\{\frac{1}{12} \times 12 \times 60^3\right\}$
$I_{yz} = 0$ Due to symmetry