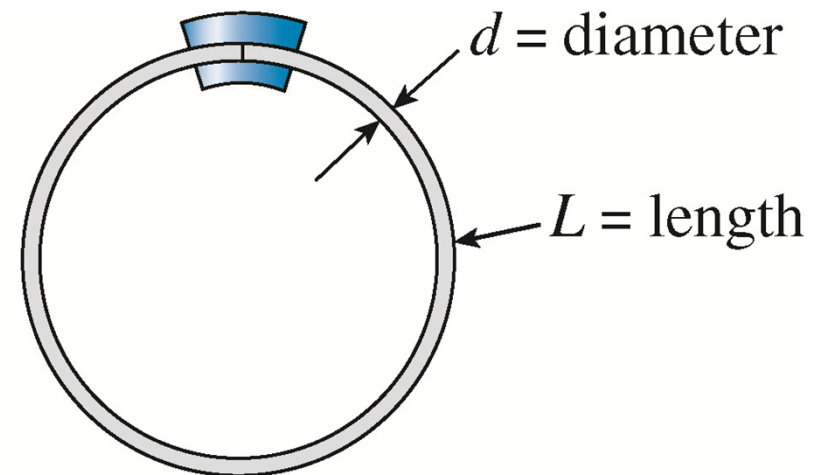# 作業12、12/20習題

- 5.4-2 、 5.4-6

- Example 12-5 (p.893)

- 12.3-3 & 12.5-3 、 12.3-7 & 12.5-7

- 12月27日 上課前繳交作業
　　　　　當日評鑑，請準時上課
　　　　　小考暫停一次。

# 5.4-2

- A copper wire having diameter d=3mm is bent into a circle and held with the ends just touching (see figure). If the maximum permissible strain in the copper is $\epsilon_{max}=0.0024$, what is the shortest length L of wire that can be used?


$d = \text{diameter}$

$L = \text{length}$

5.4-6

- A bar of rectangular cross section is loaded and supported as shown in the figure. The distance between supports is L=1.5m and the height of the bar is h=120mm. The deflection at the midpoint is measured as 3.0 mm. What is the maximum normal strain ∈ at the top and bottom of the bar?
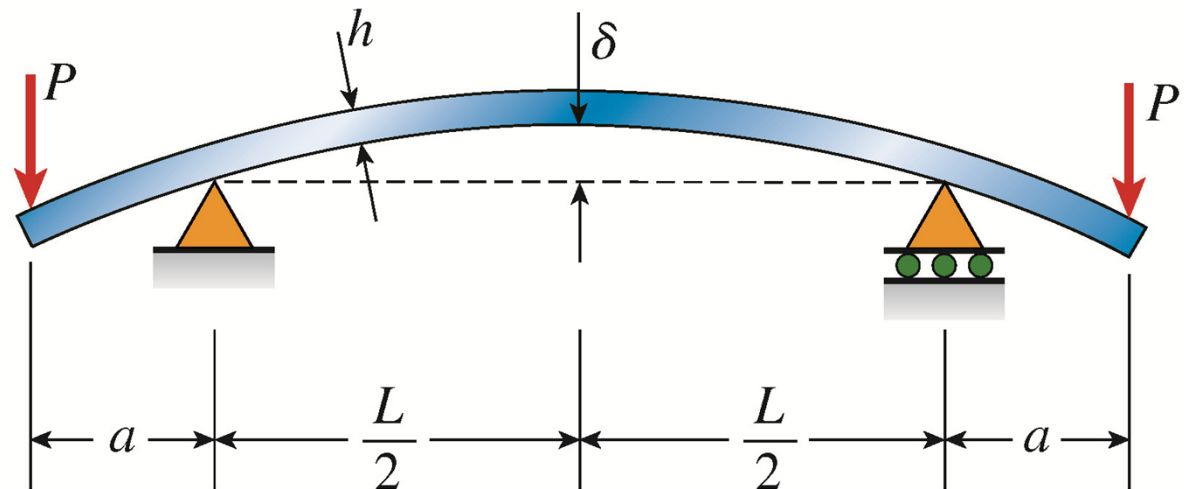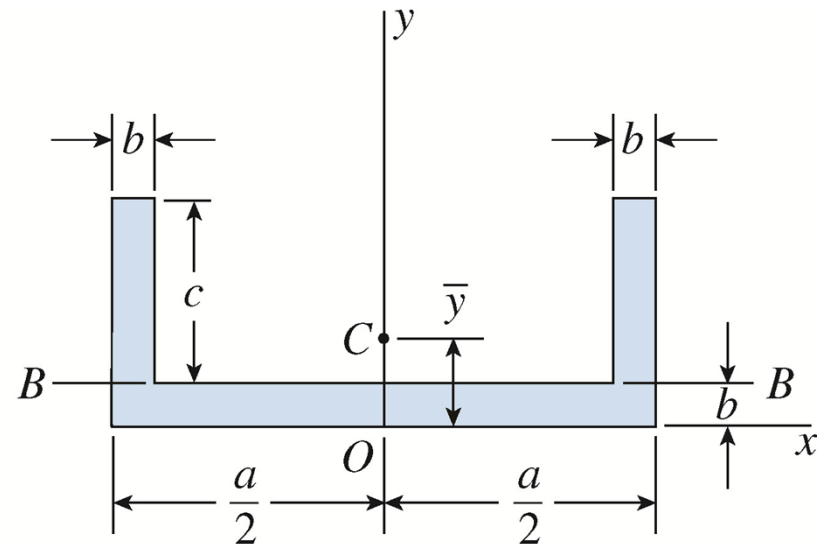
Example 12-5 (p.893)

- Determine the moment of inertia Ic with respect to the horizontal axis C-C through the centroid C.
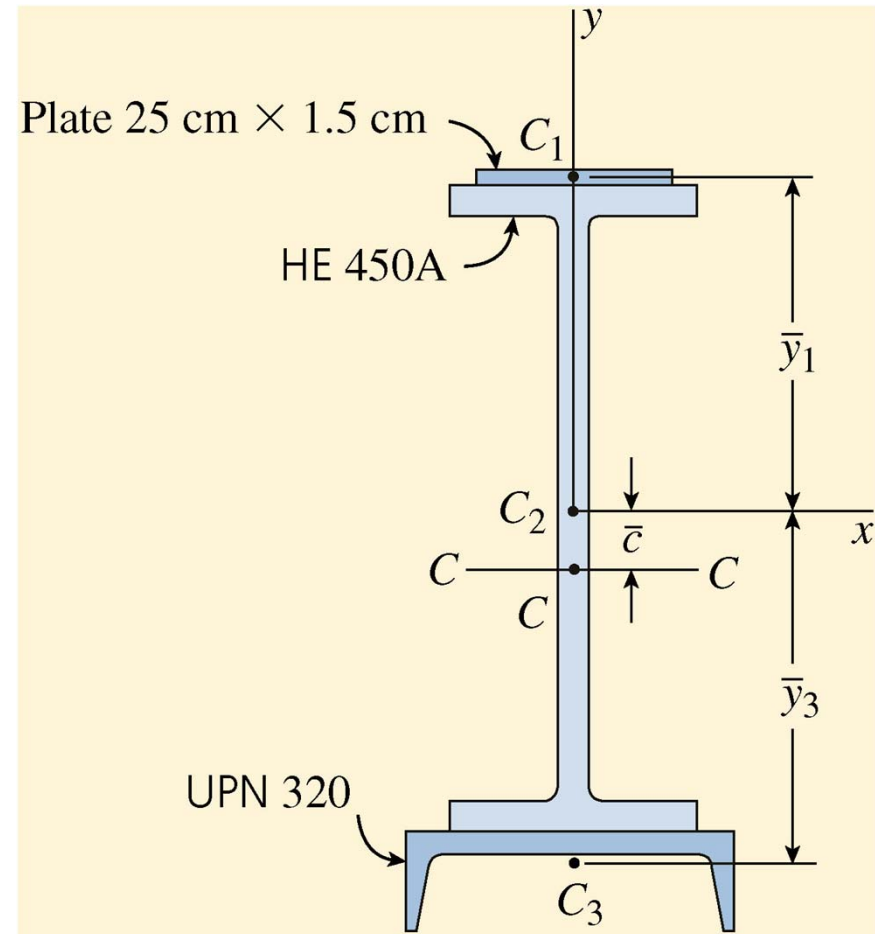
12.3-3 & 12.5-3

- Calculate the distance to the centroid C of the channel section shown in the figure if a=150 mm, b=25 mm, and c=50 mm.

  Calculate the moment of inertia I_{xc} with respect to an axis through the centroid C and parallel to the x axis.

12.3-7 & 12.5-7

- Determine the coordinates $\bar{x}$ and $\bar{y}$ of the centroid C of the L-shaped area shown in the figure. Calculate the centroidal moments of inertia I_{xc} and I_{yc} with respect to axes through the centroid C and parallel to the x and y axes, respectively,