MECHANICS OF THIN-WALLED STRUCTURES (summer 2024) HOMEWORK
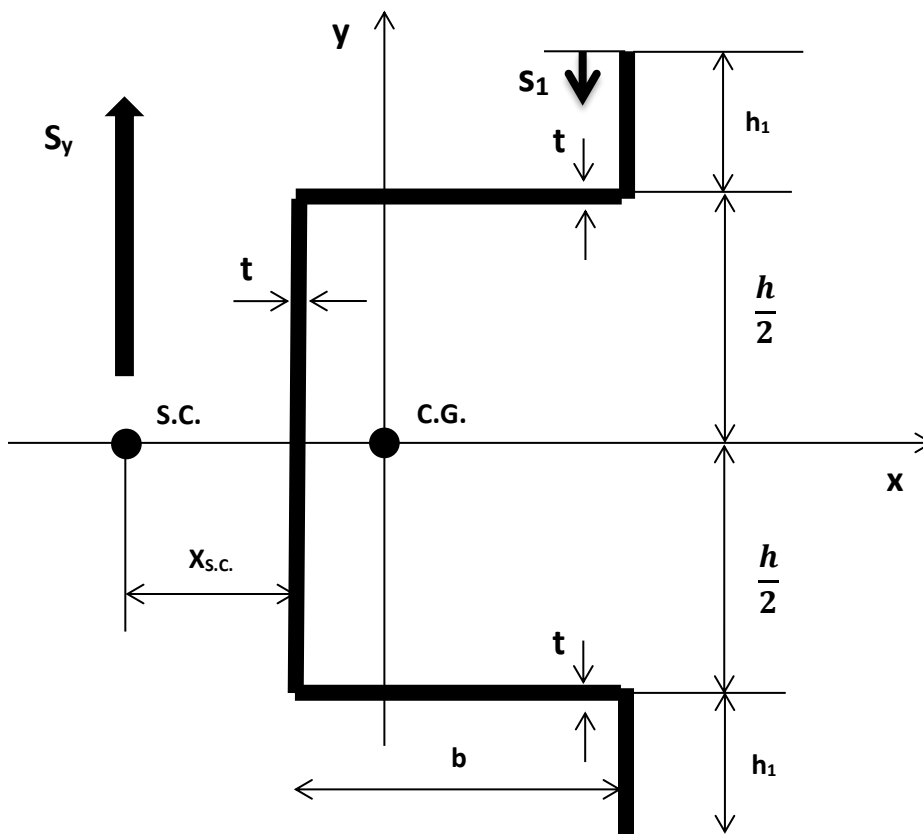
Problem 1

In the thin-walled section a shear load Sy is applied through the shear center of the section.
Details of cross-section shape and force application point are shown in detail below.
Determine:
a) distribution of the shear flow (q_s)
b) position of the shear center ($x_{s.c.}$)

Data:
$t = 0,5$ [cm]
$h = 20$ [cm]
$b = 6$ [cm]
$h_1 = 4$ [cm]
$S_y = 5$ [kN]
$S_x = 0$ [N]

Please write the position of the shear center ($x_{s.c.}$) down.
The value of the calculated shear center position ($x_{s.c.}$) will be used during the laboratory called "Open Section Thin-Walled Beam".