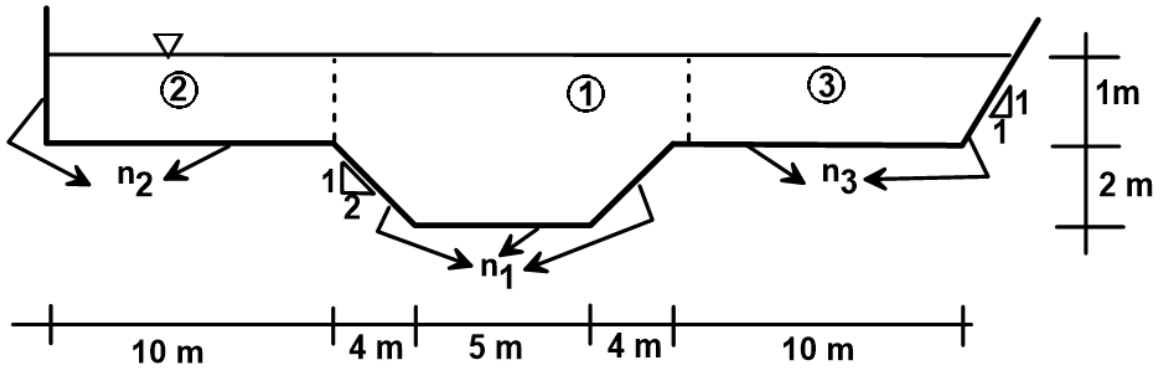
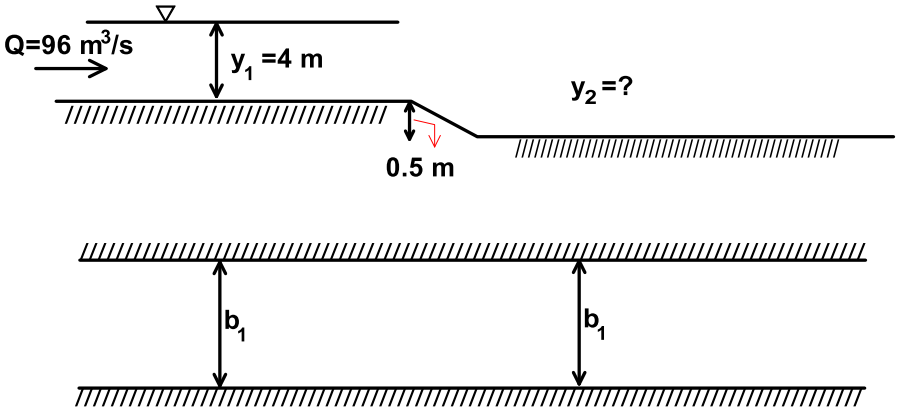
CE376 HYDROMECHANICS
HOMEWORK-IV
DUE DATE: 07.05.2020

Q1)Determine the discharge rate passing through the cross section of the compound channel shown below. The manning roughness coeffcients are n_1=0.02, n_2=0.03 and n_3=0.04. The channel bed slope for the whole channel is S_o=0.008.



Q2) Water flows at a flow rate of Q=96 m^3/s in a **rectangular** channel with a downward step of Δz=0.5 m. Channel has **the best rectangular hydraulic section** before the step and channel width (b) is constant in the channel. Assume that friction losses are negligible and state of flow is conserved (does not change after the step).



a)Compute the Froude Number and decide the state of flow.
b)Compute the channel width b for the best rectangular hydraulic section before the step.
c)Compute the water depth after the downward step Δz=0.5 m
d) Draw the continous water surface profile showing water depths before and after the step.