AA210A Homework 8 2020 - 2021

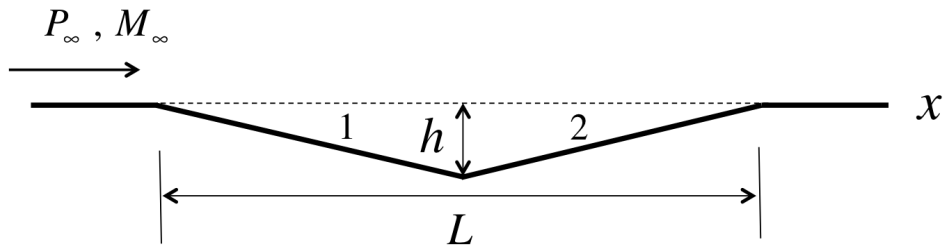Due Wednesday November 11

Suggested viewing: Watch the film WAVES IN FLUIDS on the MIT website

Read Chapters 11 and 12

Chapter 11 – Problems 1 and 6

Chapter 12 – Problems 2, and 10

Problem - The figure below shows inviscid, $M_\infty = 3$, flow of air over a small triangular depression with depth to length ratio $h/L = 1/8$.

(a) Sketch the flow field showing any shocks and expansions.
(b) Determine P_1/P_∞ and P_2/P_∞.
(c) Determine the drag coefficient of the depression based on the depth h.
(d) Compare (c) with the drag coefficient of a bump of the same dimensions.