Problem 352A

A supersonic flow of Mach number, $M = 5$, experiences a wall excursion as follows:
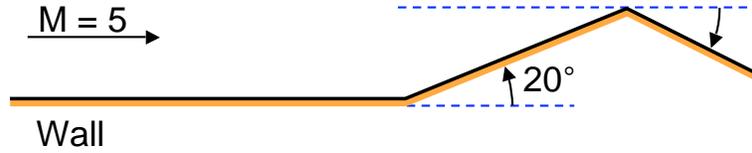
Assuming that a weak oblique shock wave occurs in the flow what is the maximum angle, θ, for which the flow will still be able to negotiate the excursion?