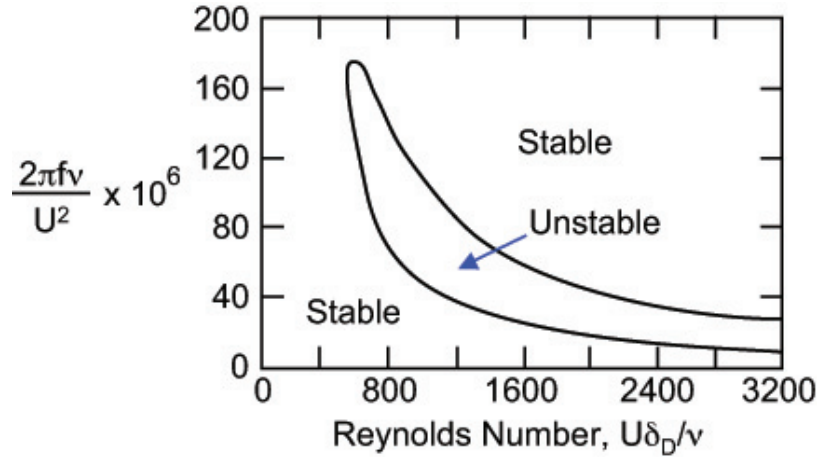


Problem 260A

The stability diagram for a laminar boundary layer on a flat plate with zero pressure gradient (Blasius problem) is given below:



Using the solid, theoretical curve find the distance from the leading edge of the plate to the point where transition to turbulence begins for a flow of water ($\nu = 10^{-6} \text{ m}^2/\text{s}$) when $U = 2 \text{ m/s}$. What is the frequency of the most unstable disturbances (in Hz) under these conditions?