

Symmetric Airfoil:-



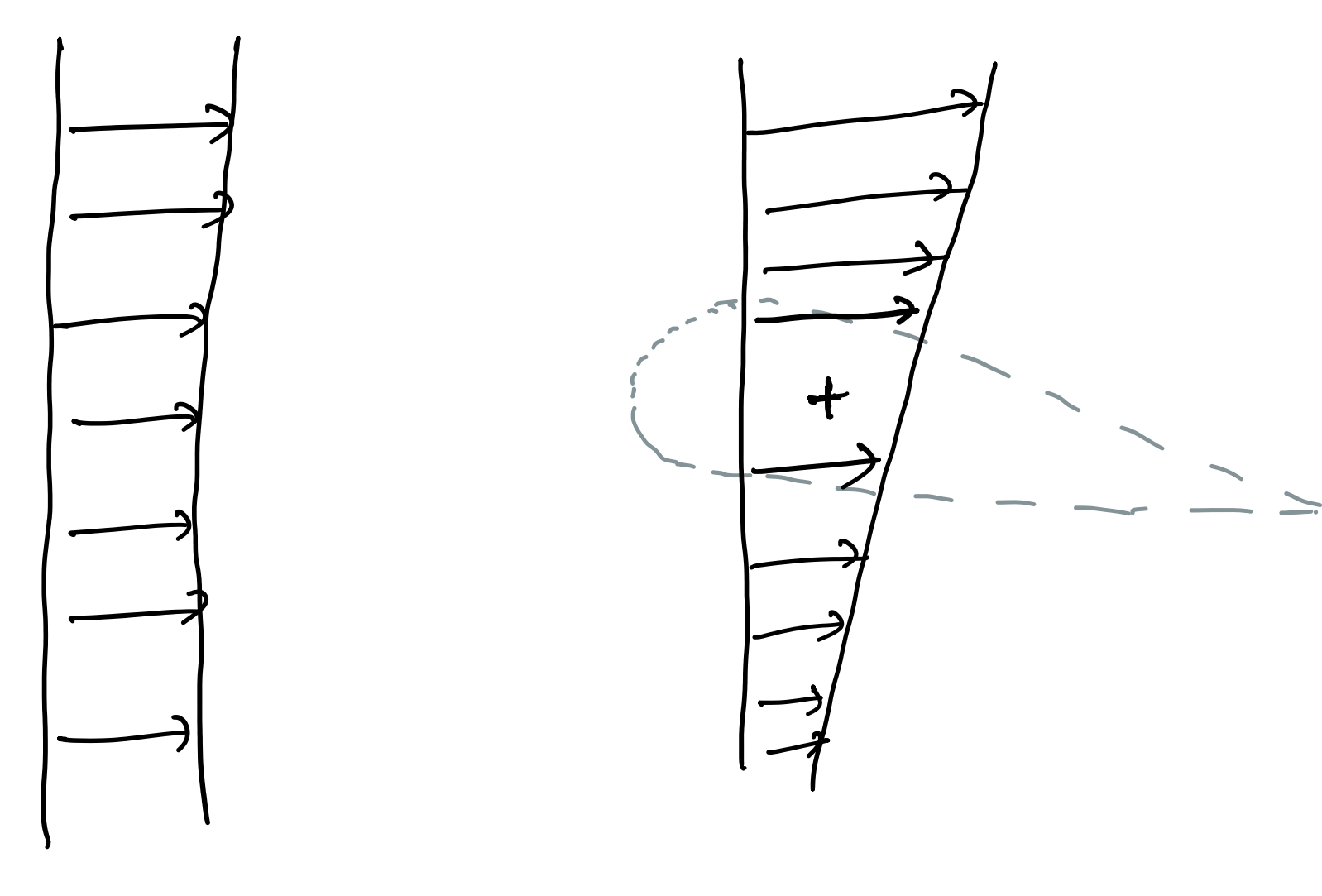
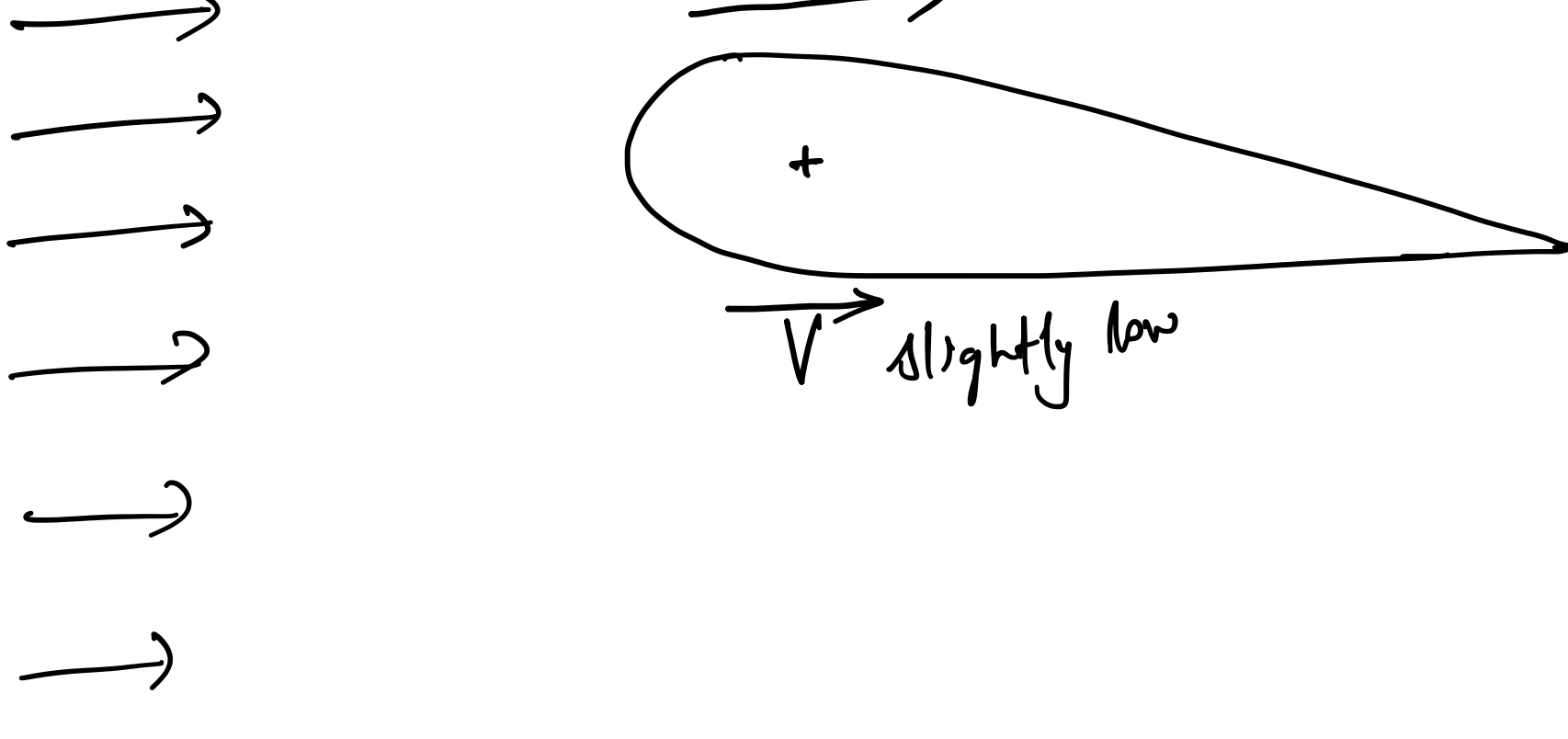
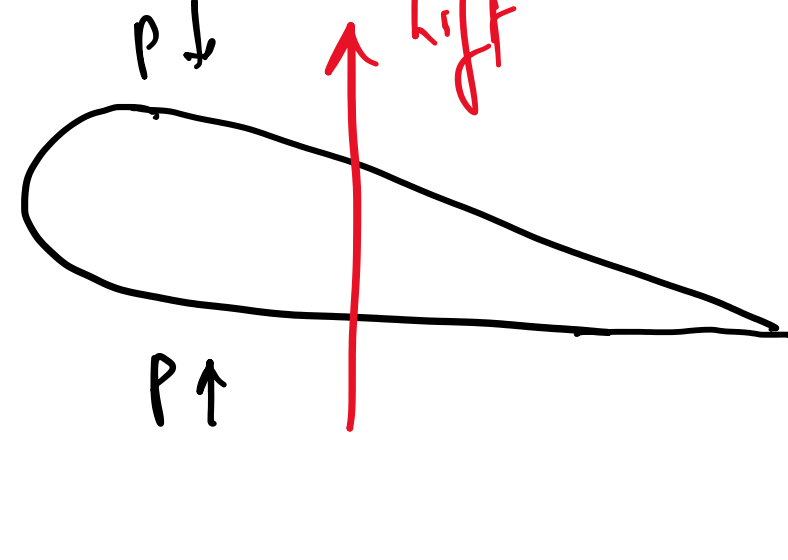
No lift is produced due to symmetry in the problem.

How to make asymmetry?

Velocity is higher above the airfoil
 \Rightarrow p is lower above the airfoil

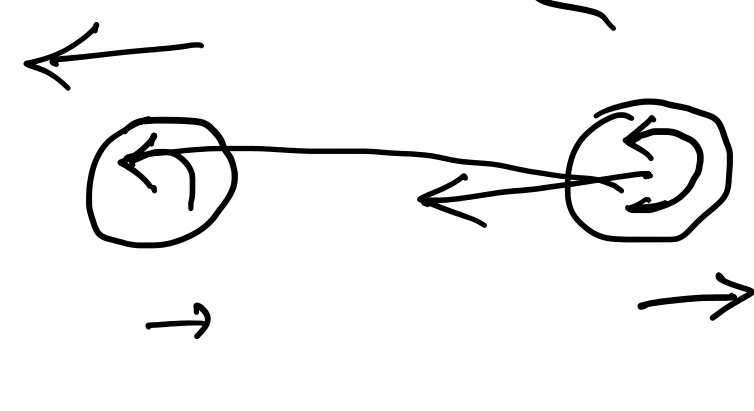
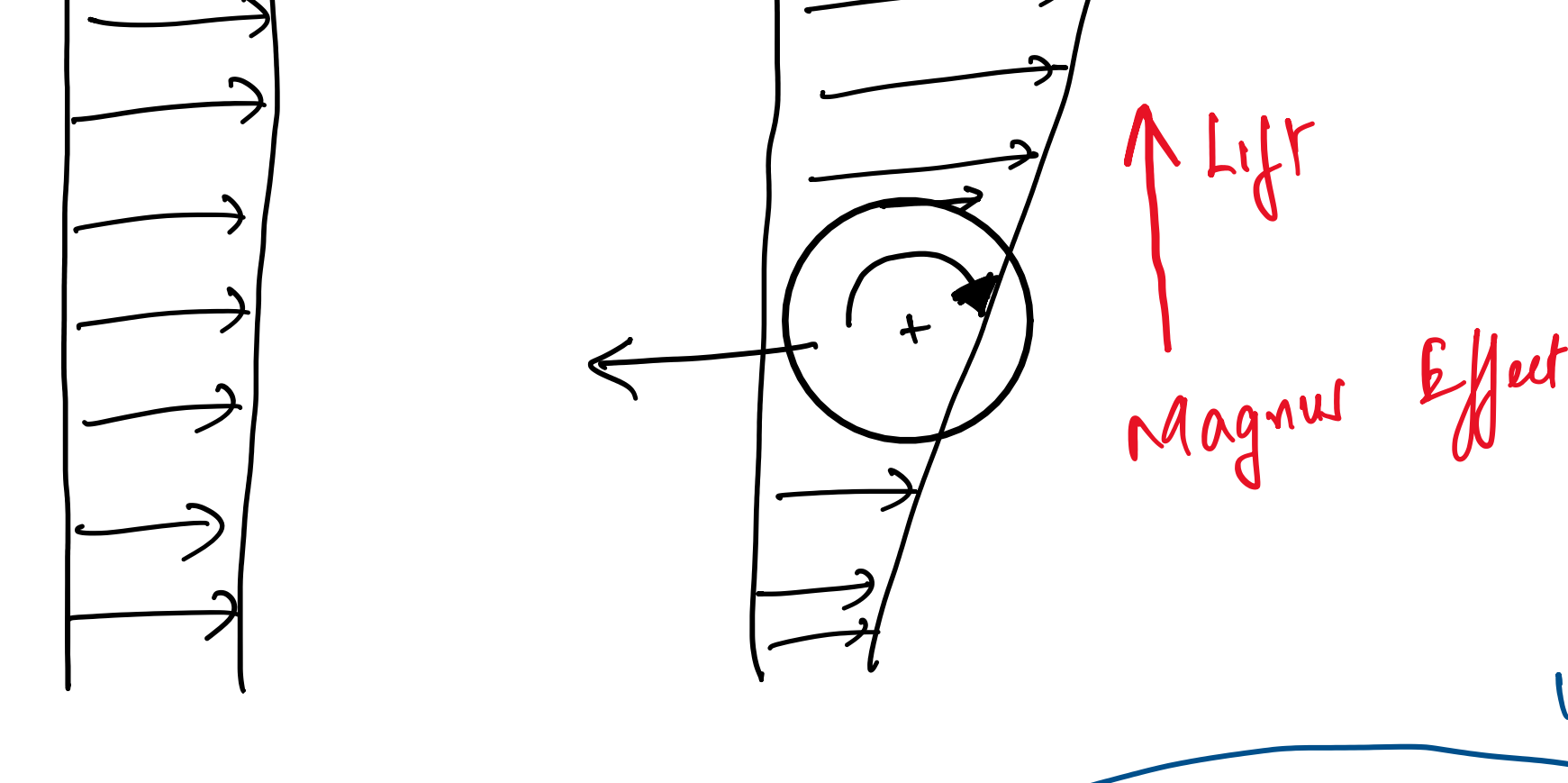


α : Angle of attack



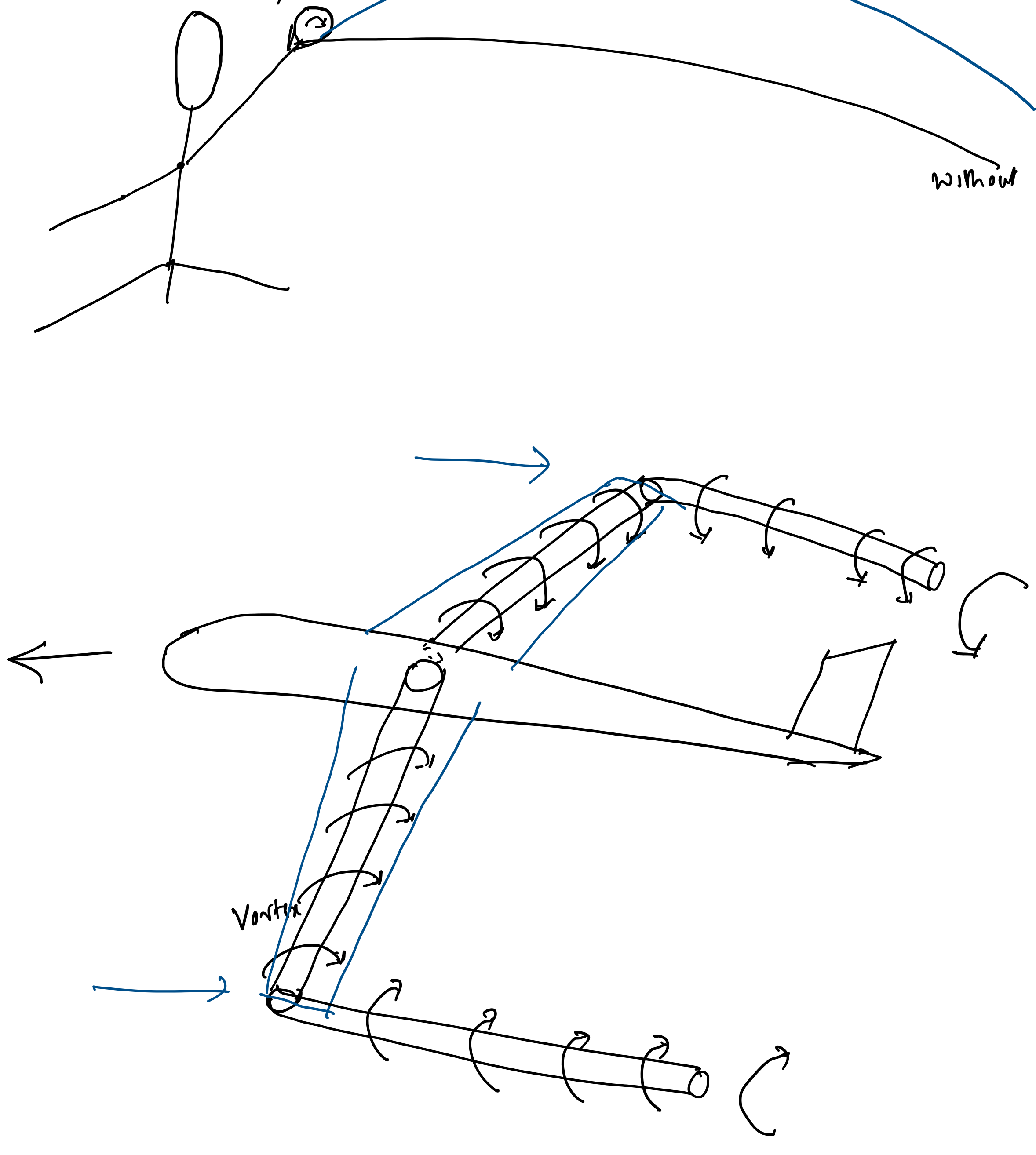
Curl of velocity

$$\nabla \times \underline{u} = \underline{\omega} \text{ (Vorticity)}$$



with spin

without spin



Aerodynamics of sports balls:-

