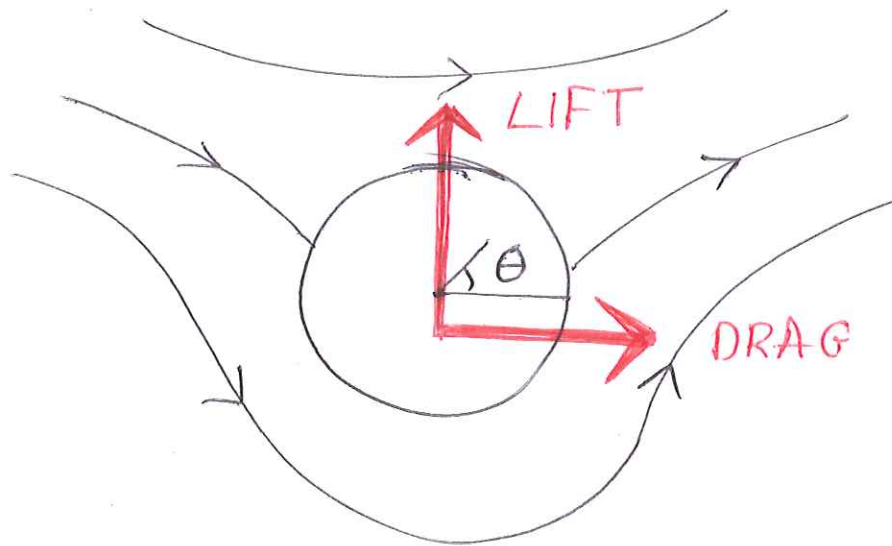


For flow around a cylinder with circulation κ

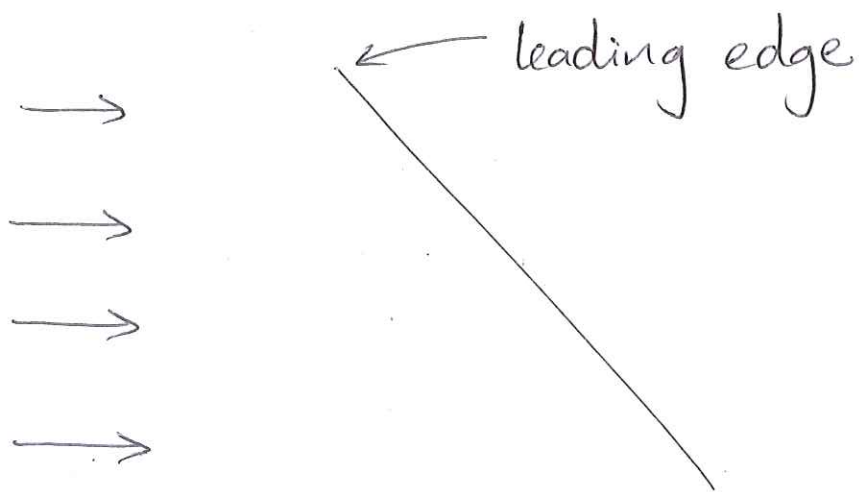


$$p(r=a, \theta) = \text{const} - \frac{1}{2}\rho \left[2U\sin\theta - \frac{\kappa}{2\pi a} \right]^2$$

$$F_{\text{cylinder}} = \int_0^{2\pi} -p e_r d\theta$$

- no drag for any κ , but lift for $\kappa \neq 0$
- no drag or lift for $\kappa = 0$, but drag and lift for $\kappa \neq 0$
- no drag or lift for any κ

For a steeply inclined aerofoil



- a) the solution stays the same as for a slight incline, just steeper
- b) vorticity is generated at the leading edge but stays confined
- c) vorticity is generated at the leading edge and leaves the aerofoil