Takeaways:

Two classes of assumption
① does the coefficient
$v_r, v_\theta, v_z = 0$?
② how does it change

Look for what assumptions to make
to simplify the eqns

Substitution = good way to approach
scary integral

① sketch, coord sys
② continuity eqn
③ NS
④ solve
⑤ BC
⑥ Engineering quantities

- steady
- cylindrical sym
- constant ρ

BC: $r = 0$ $\dfrac{dv_z}{dr} = 0$
(max at $r = 0$)

2 types of questions:
- velocity components
- about variation

Takeaways:

① sketch
② coord sys
③ continuity
④ micro momentum
⑤ solve
⑥ Bc

Steady
uni direction
θ symmetry
incompressible
gravity

☆ Pressure driven
flow is
v. common

When integrating
avoid
differentiating

Separation of variable
Bc: finite velocity
$$\frac{dV_z}{dr} = 0 \text{ at } r = 0$$