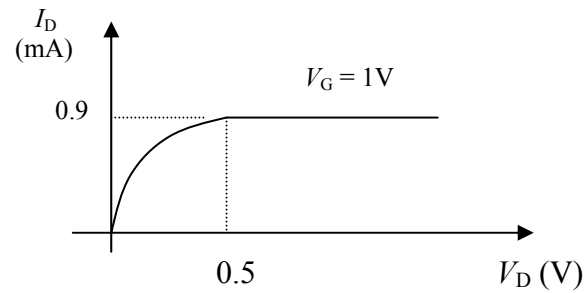




2. The figure below shows the drain current ( $I_D$ ) versus drain voltage ( $V_D$ ) of a silicon MOS transistor as a function of gate voltage ( $V_G$ ). The gate capacitance ( $C_{ox}$ ) of the device is  $1 \times 10^{-12}$  F.



- Is this an n-channel or p-channel device?
- Is this an enhancement or depletion mode device?

For a gate voltage,  $V_G = 3$  V:

- What is the drain voltage for saturation?
- What is the drain current in saturation?
- What is the small-signal trans-conductance in saturation?