

The attached figure shows an amplifier circuit.

* Sketch the small-signal equivalent circuit of the amplifier and use it to estimate the voltage gain.
* Attempt to calculate the quiescent value of VOUT.  Hint : Apply the appropriate equation:

IDS = $\frac{2×IDSS}{VP^{2}}\left(VDS \left[VGS-VP\right]-\frac{VDS^{2}}{2}\right)$or IDS = IDSS $\left(1-\frac{VGS}{VP}\right)^{2}$