

Special Problem 4.5-3

In the circuit below, Q_1 has $K=1.0 \text{ mA/V}^2$ and $V_{t1} = 1.0 \text{ V}$.

The transistor Q_2 likewise has $K=1 \text{ mA/V}^2$, but has a threshold voltage of $V_{t2} = 2.0 \text{ V}$.

In other words Q_1 and Q_2 are **not** identical!

The resistor R_2 has been selected such that Q_2 is in saturation.

- 1) Determine R_1 (note I said R_1 !) so that the drain current of Q_2 (note I said Q_2 !) is 4.0 mA .
- 2) What is the **largest** possible value of resistor R_2 so that Q_2 remains in **saturation**?

