

EE 310

Practice Problem 3

- (a) In the circuit of Fig. 1 let the FET have $V_{in} = 1.0$ V, $k_n = 0.5$ mA/V². Assuming $\lambda_n = 0$, find the FET's operating point Q .
- (b) To what value must we increase R_D to bring the FET to operate at the edge of saturation (EOS)?
- (c) What happens if R_D is raised to twice the value found in part (b)?

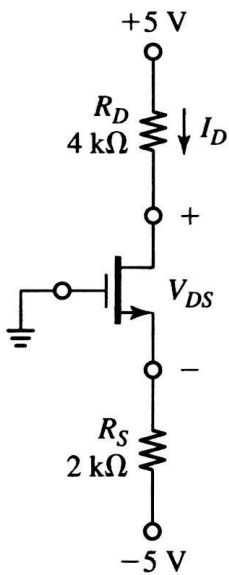


Figure 1

- (a) $I_D = 1$ mA, $V_{DS} = 4$ V
(b) $I_D = 1$ mA, $V_{DS} = 2$ V
(c) $I_D = 0.674$ mA, $V_{DS} = 0.57$ V