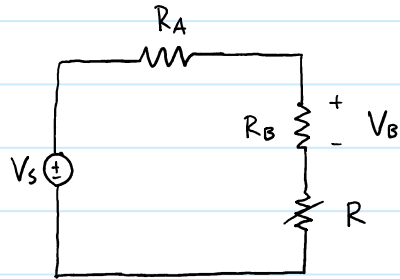


Homework 6

Saturday, May 20, 2017 9:03 PM

Ex 7.3)



$$R = \frac{K}{V_B}$$

$$V_s = I (R_A + R_B + R)$$

$$I = \frac{V_B}{R_B}$$

$$V_s = V_B \left(\frac{R_A}{R_B} + 1 + \frac{K}{R_B V_B} \right)$$
$$= V_B \left(1 + \frac{R_A}{R_B} \right) + \frac{K}{R_B}$$

$$V_B = \frac{R_B}{R_A + R_B} \left(V_s - \frac{K}{R_B} \right)$$
$$= \frac{R_B V_s - K}{R_A + R_B}$$

Ex. 7.4) $i_{DS} = \frac{K}{2} (V_{GS} - V_T)^2$

saturation region: $V_{DS} \geq V_{GS} - V_T$, $V_{GS} \geq V_T$

$$V_{GS} - V_T = \sqrt{\frac{2i_{DS}}{K}}$$

$$V_{DS} \geq \sqrt{\frac{2i_{DS}}{K}}$$