Njoku Victory
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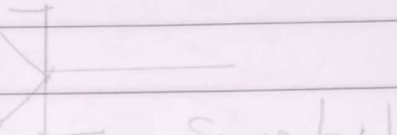
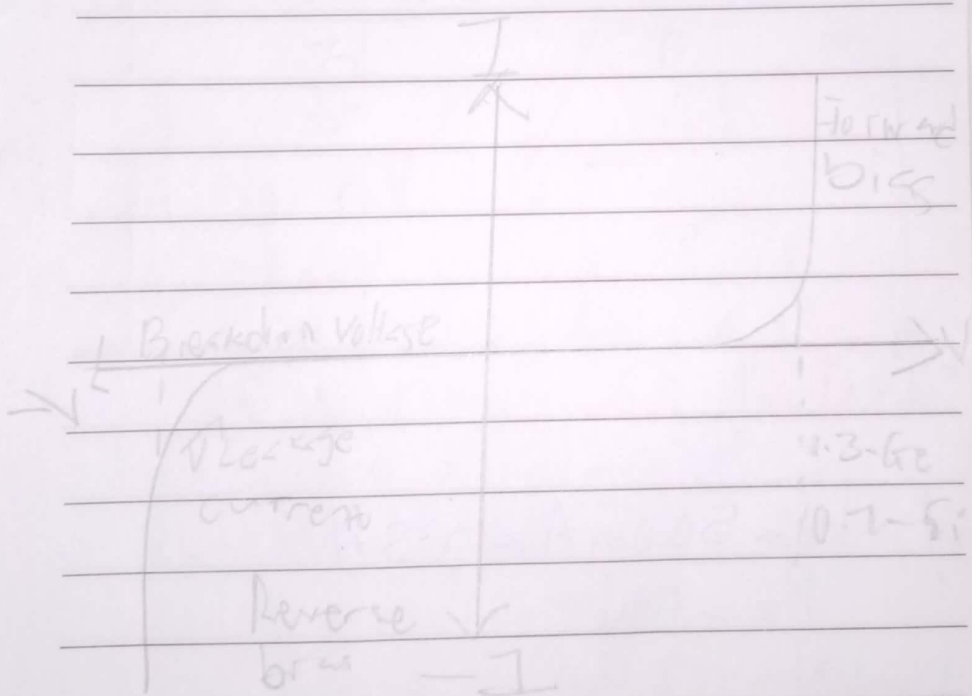
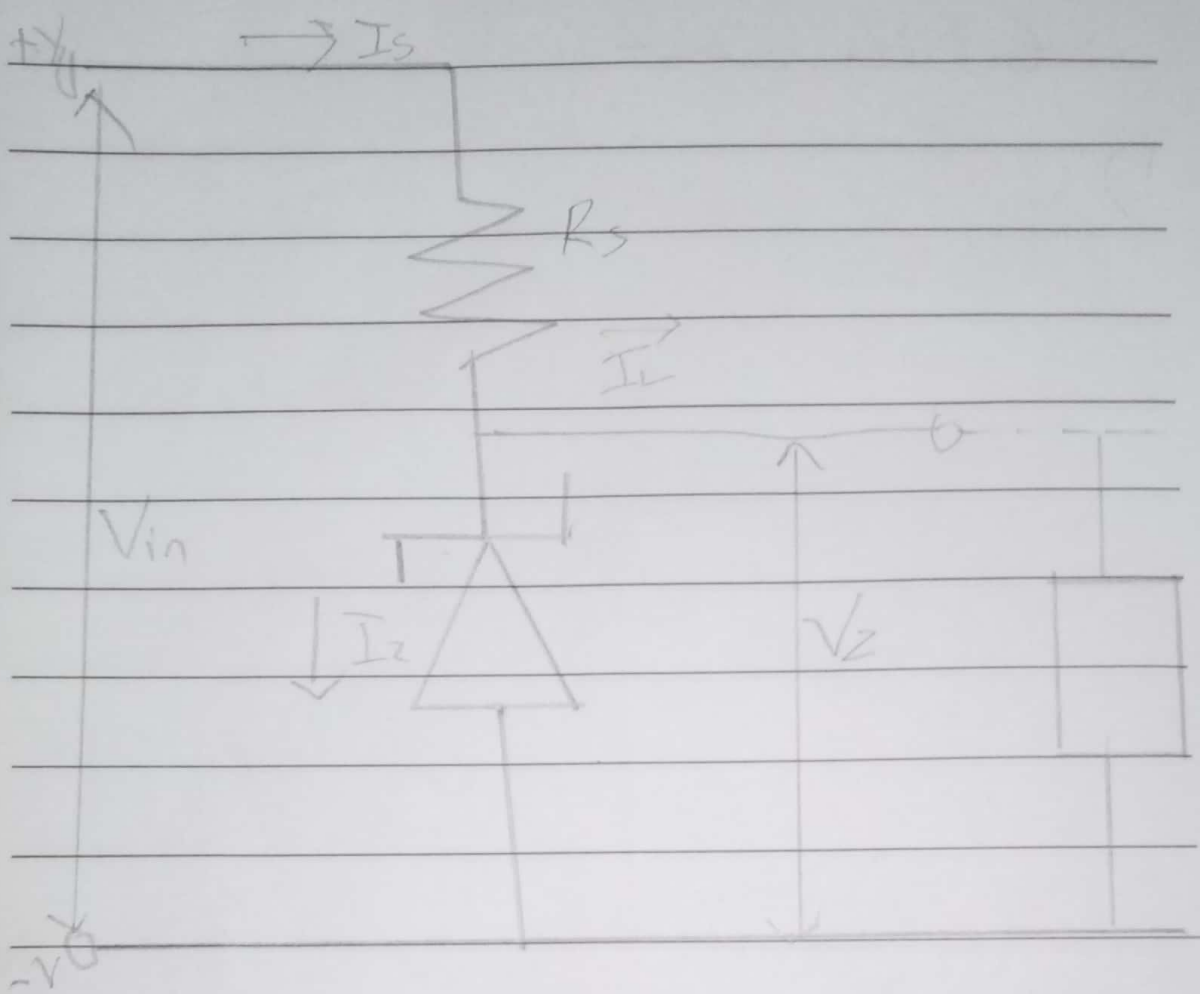


Symbol





2) $I_z = 500mA = 0.5A$

$P_z = 5W$

$V_{in} = 20V$

V_z ?

R_s ?

I_z (Full load) = ?

$V_2 = 0.638 V_{in} = 0.638 \times 20 = 12.72 V$

$P_2 = I_2 V_2$

$V_2 = \frac{P_2}{I_2} = \frac{5}{0.5} = 10V$

$R_s = \frac{V_s - V_2}{I_L} = \frac{12.72 - 10}{0.5} = 5.44\Omega$

If load current = ?

If full load $V_2 = V_L$

At full load of 500Ω $I_s = I_L + I_2$

$I_s = 500mA$

$I_L = \frac{V_2}{R_L} = \frac{10}{500\Omega} = 20mA$

$I_2 = I_s - I_L = 500 - 20 = 480mA$