

Special Problem 3.4-1

A diode manufacturer provides us with the information that, when in breakdown, a certain Zener diode will exhibit a voltage of 10 V across it when 10 mA is flowing through it. Likewise, the incremental resistance of the diode at this operating point is $r_z = 10$ ohms. This Zener diode is used in the regulator circuit shown below.

- Find the value of resistor R , if the current through the Zener diode is 10 mA.
- Approximately how much will v_o change if v_i changes by 1 mV ?
- Approximately how much will v_o change if current i_L changes by 1 mA ?

