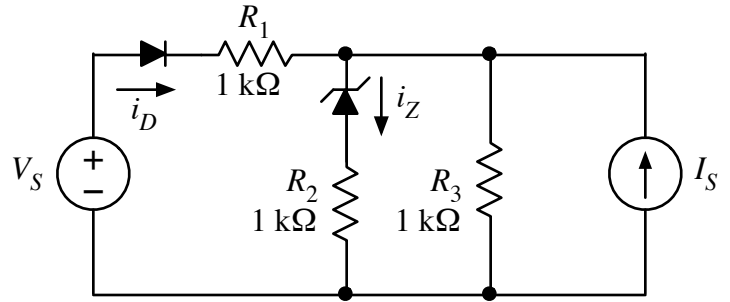


In the circuit show at right, the Zener diode has a breakdown voltage of 5 V.

Calculate the two diode currents for the following combination of source values:



$V_S = +12\text{ V}, I_S = +8\text{ mA}: i_D = \underline{\hspace{2cm}}, i_Z = \underline{\hspace{2cm}}$

$V_S = +12\text{ V}, I_S = -8\text{ mA}: i_D = \underline{\hspace{2cm}}, i_Z = \underline{\hspace{2cm}}$

$V_S = -12\text{ V}, I_S = +8\text{ mA}: i_D = \underline{\hspace{2cm}}, i_Z = \underline{\hspace{2cm}}$