

**Special Problem 3.3-8**

The voltage source on the **left** side of the circuit below produces a **d.c. voltage**  $V_s=5.7$  V.

The voltage source on the **right** side of the circuit below produces a **small a.c. signal**  $v_s(t)$ .

The junction diode has an ideality factor of  $n = 1.6$

Determine the **small-signal voltage** across the diode, in terms of small-signal voltage source  $v_s(t)$ .

