**Special Problem 3.3-9**

The voltage source at the left of the circuit below produces a small a.c. signal $v_S(t)$.

The junction diode $D_1$ has an ideality factor of $n = 1.0$

The junction diode $D_2$ has an ideality factor of $n = 2.0$

The capacitor in the circuit is extremely large (i.e., a DC open, but an AC "short"!)  

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

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Diagram:

- Voltage source $v_S(t)$
- Capacitor $C$
- Diode $D_1$ with ideality factor $n = 1$
- Diode $D_2$ with ideality factor $n = 2$
- 250 ohm resistor
- 1.75 K ohm resistor
- 1.6 V voltage source