Special Problem 3.2-9

In the circuit below:

Junction diode D_1 has values $n = 1.000$ and $I_s = 5.11 \times 10^{-15}$ A.

Junction diode D_2 has values $n = 1.737$ and $I_s = 1.00 \times 10^{-8}$ A.

Using the **exact** junction diode equation (do **not** use diode models!), determine the value of **current I** and **voltage V** in the circuit below.

2.0 V

+

V ↓ 10 mA

I

-

0.65 V

+

-

$R_3 =$
0.325 K

D_1 $n = 1.000$
$I_s = 5.11 \times 10^{-15}$ A

D_2 $n = 1.737$
$I_s = 1.00 \times 10^{-8}$ A