Answers to the Homework Problems:

**Homework 2**
3.1  (a) 0.367 V  (b) 3.2 x 10^{12} \text{ cm}^{-2}
3.2  2.18 x 10^{-15} \text{ F}
3.6  1.21 x 10^{-12} \text{ F}
3.9  -0.988 V
3.11 (a) 0.478 V  (b) \text{p-type } N_i = 1.667 \times 10^{12} \text{ cm}^{-3};
   \text{n-type, } N_i = 1.482 \times 10^{13} \text{ cm}^{-3}

**Homework 3**
5.1  (a) \frac{W}{L} = 87.6  (b) V_{IL} = 0.546 V  V_{IH} = 0.772 V  (c) NM_L = 0.496 V
   NM_H = 0.328 V
5.4  (a) V_{OH} = 0.72 V, V_{OL} = 0.36 V (b) V_{IL} = 0.48 V, V_{IH} = 0.6 V, NM_L = 0.12V, NM_H = 0.12V (c) I_D = 19.83 \mu A, PDC = 23.76 \mu W
5.5  (W/L)_p = 58.8  (W/L)_n = 121.89  (b) Follow Example 5.3 to solve for
   V_{IL} and V_{IH}
5.7  (a) \frac{W_n}{W_p} = 64, (b) 0.527V, 0.691 V

**Homework 4**
7.7  V_{OL} = 0 V, V_{OH} = 1.2V, V_{IL} = 0.207V, V_{IH} = 0.61 V, NM_L = 0.207,
    NM_H = 0.59 V
7.10 (b) W_L/L_L = 0.2
7.11 (a) \overline{F} = \bar{A} \bar{B} + \bar{A} \bar{B}