

TTL Logic

4) Determine the voltages and currents for the following TTL gate. Assume

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DTL Logic

6) Determine the voltages and currents when $V_0 = 1V$. Assume

- Ideal transistors ($V_{be} = 0.7V$, $V_{ce(sat)} = 0.2V$, gain = 100)
- Ideal silicon diodes ($V_f = 0.7V$)
- $R = 800 + 100(\text{Birth Month}) + (\text{Birth Day})$.

| R | V1 | V2 | V3 | I4 | I5 |
|--|--------------|--------------|---|---------------|---|
| $800 + 100 \cdot \text{mo} + \text{day}$ | | | | | |
| 1314 | 5.00V | 1.40V | 0.20V | 2.74mA | 240mA |
| | | | saturated: 0.2V active: $5 - 20 \cdot I_5$ | | $\min(I_4 \cdot 100, 240\text{mA})$ active / saturated |

