4.42 In the circuits shown in Fig. P4.42, transistors are characterized by \(|V_s| = 2 \text{ V, } k'W/L = 1 \text{ mA/V}^2, \text{ and } \lambda = 0\).

(a) Find the labelled voltages \(V_1\) through \(V_7\).
(b) In each of the circuits, replace the current source with a resistor. Select the resistor value to yield a current as close to that of the current source as possible, while using resistors specified in the 1% table provided in Appendix G. Find the new values of \(V_1\) to \(V_7\).

\[+10 \text{ V} \quad 4 \text{ k}\Omega \quad -10 \text{ V} \quad 2 \text{ mA}\]
\[+10 \text{ V} \quad 1 \text{ mA}\]
\[+5 \text{ V} \quad 10 \mu\text{A}\]
\[+5 \text{ V} \quad 100 \mu\text{A}\]

\[\text{(a)} \quad \text{(b)} \quad \text{(c)} \quad \text{(d)} \quad \text{(e)} \quad \text{(f)} \quad \text{(g)} \quad \text{(h)}\]

\[\text{FIGURE P4.42}\]

4.43 For each of the circuits in Fig. P4.43, find the labeled node voltages. For all transistors, \(k'_n(W/L) = 0.4 \text{ mA/V}^2, V_i = 1 \text{ V, and } \lambda = 0\).

\[+5 \text{ V} \quad 1 \text{ mA} \quad 2 \text{ mA} \quad 100 \text{ k}\Omega \quad 100 \text{ k}\Omega \quad +5 \text{ V}\]

\[\text{(h)} \]

\[\text{FIGURE P4.43}\]