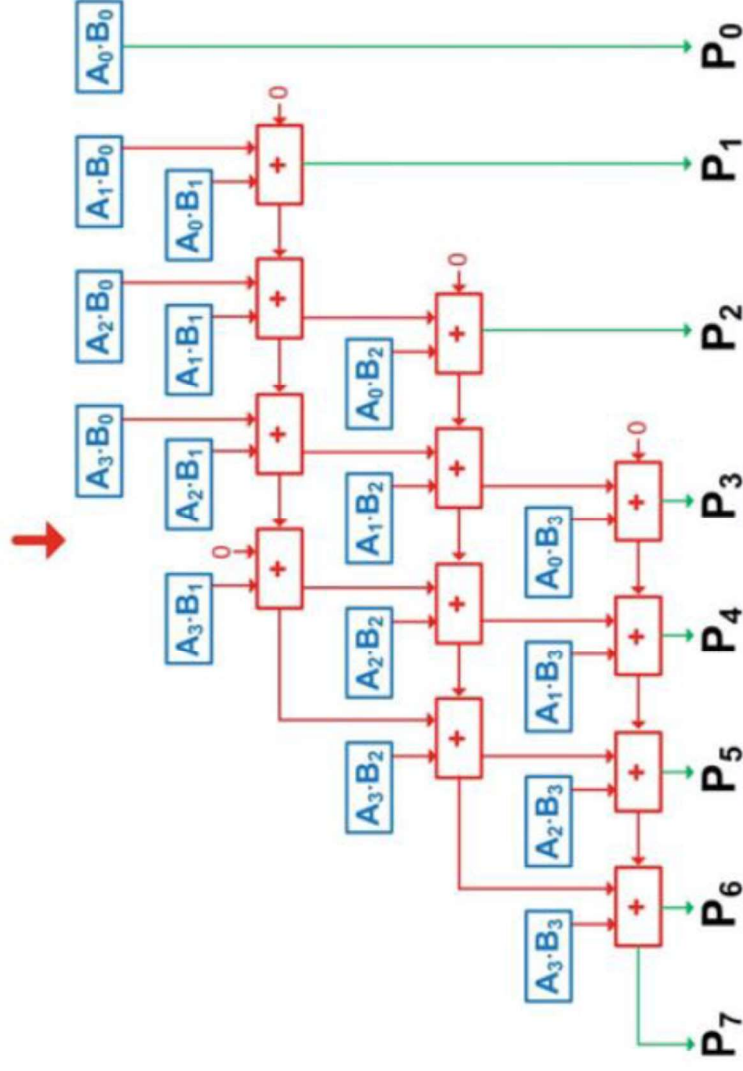


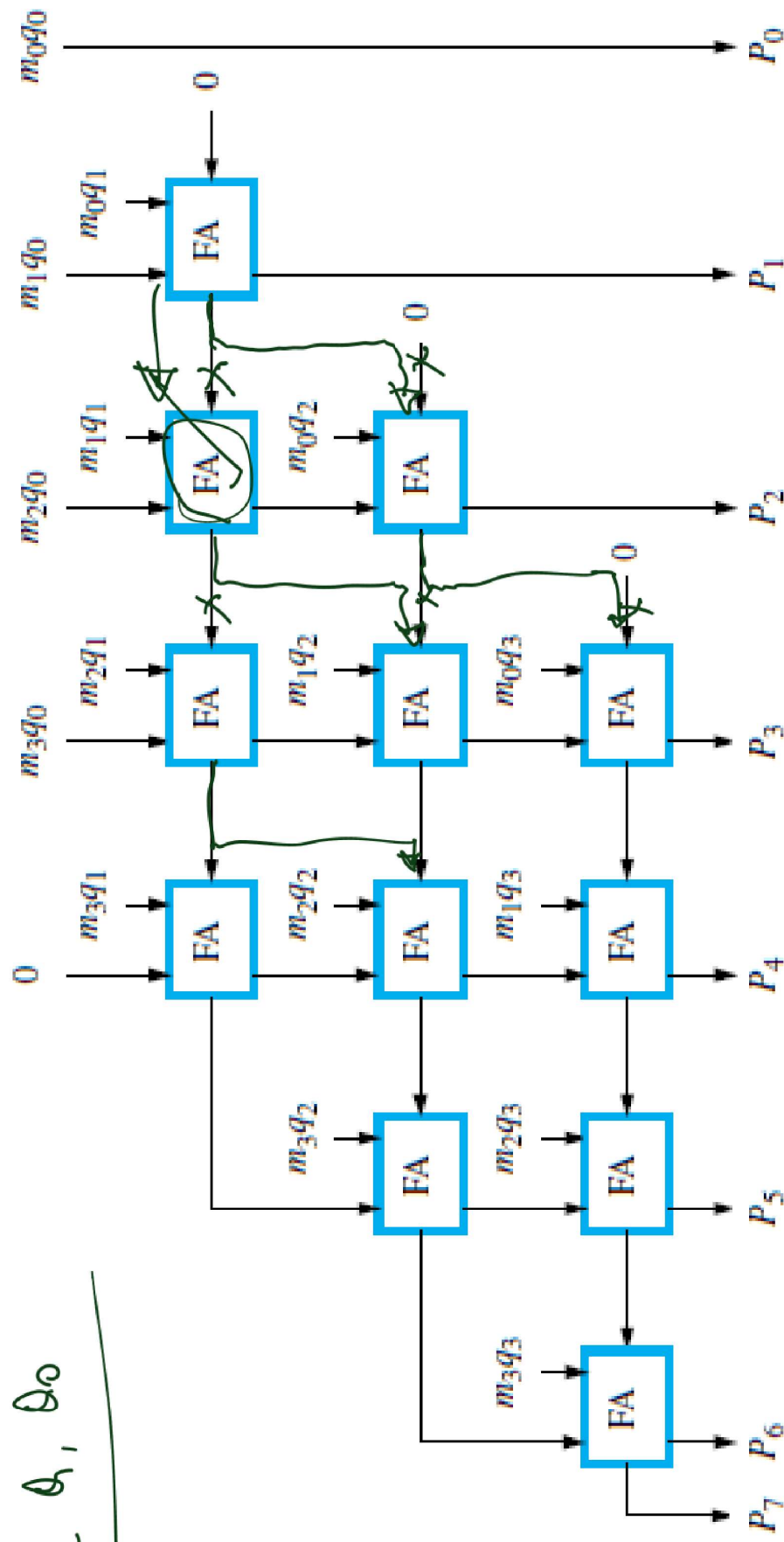
Example: Design of a 4-Bit Unsigned Multiplier

If we break the sum of the partial product columns into incremental addition steps, we can then use full adders.

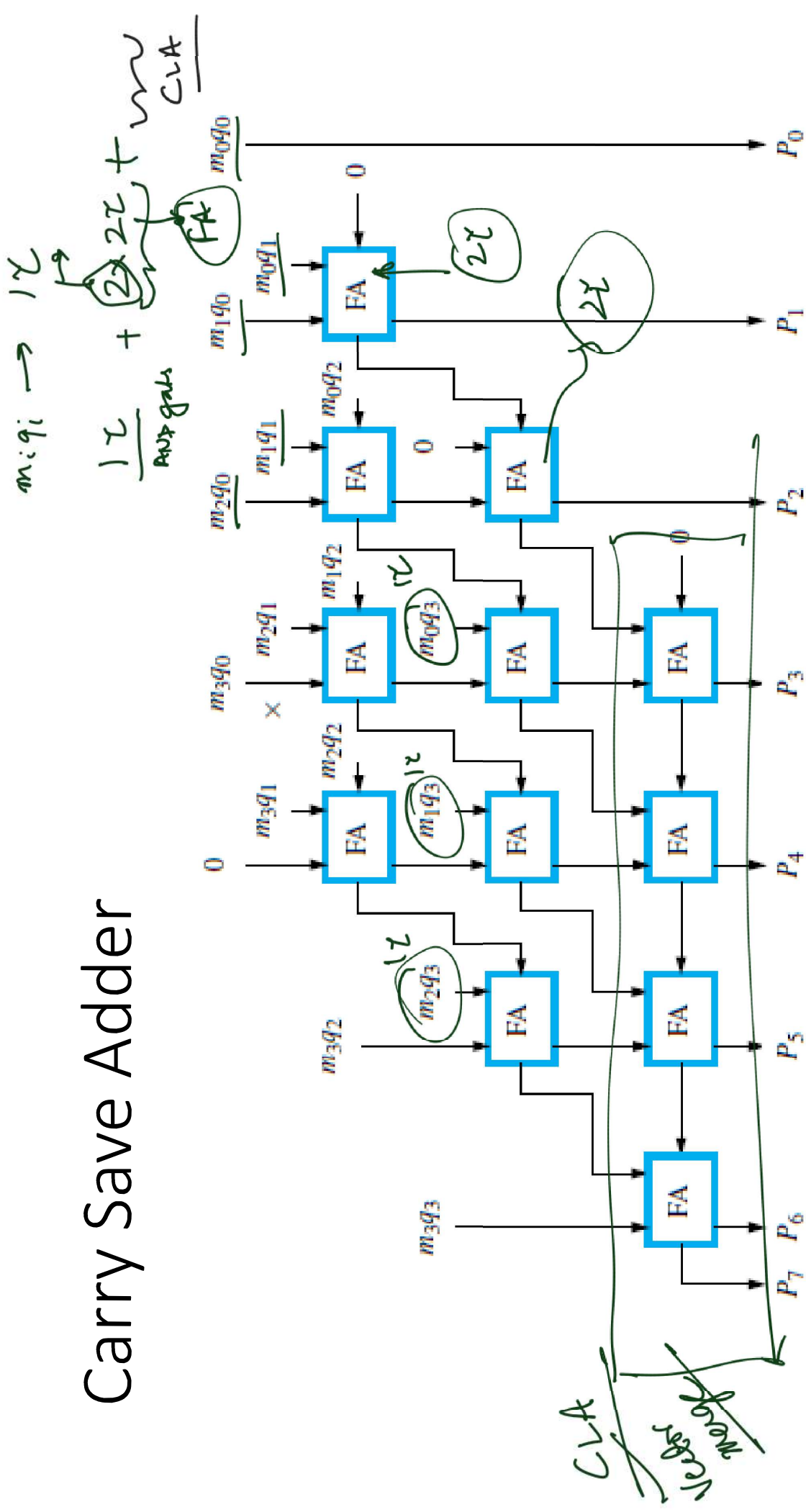
$$\begin{array}{r}
 A_3 A_2 A_1 A_0 \\
 \times B_3 B_2 B_1 B_0 \\
 \hline
 P_7 P_6 P_5 P_4 P_3 P_2 P_1 P_0
 \end{array}$$



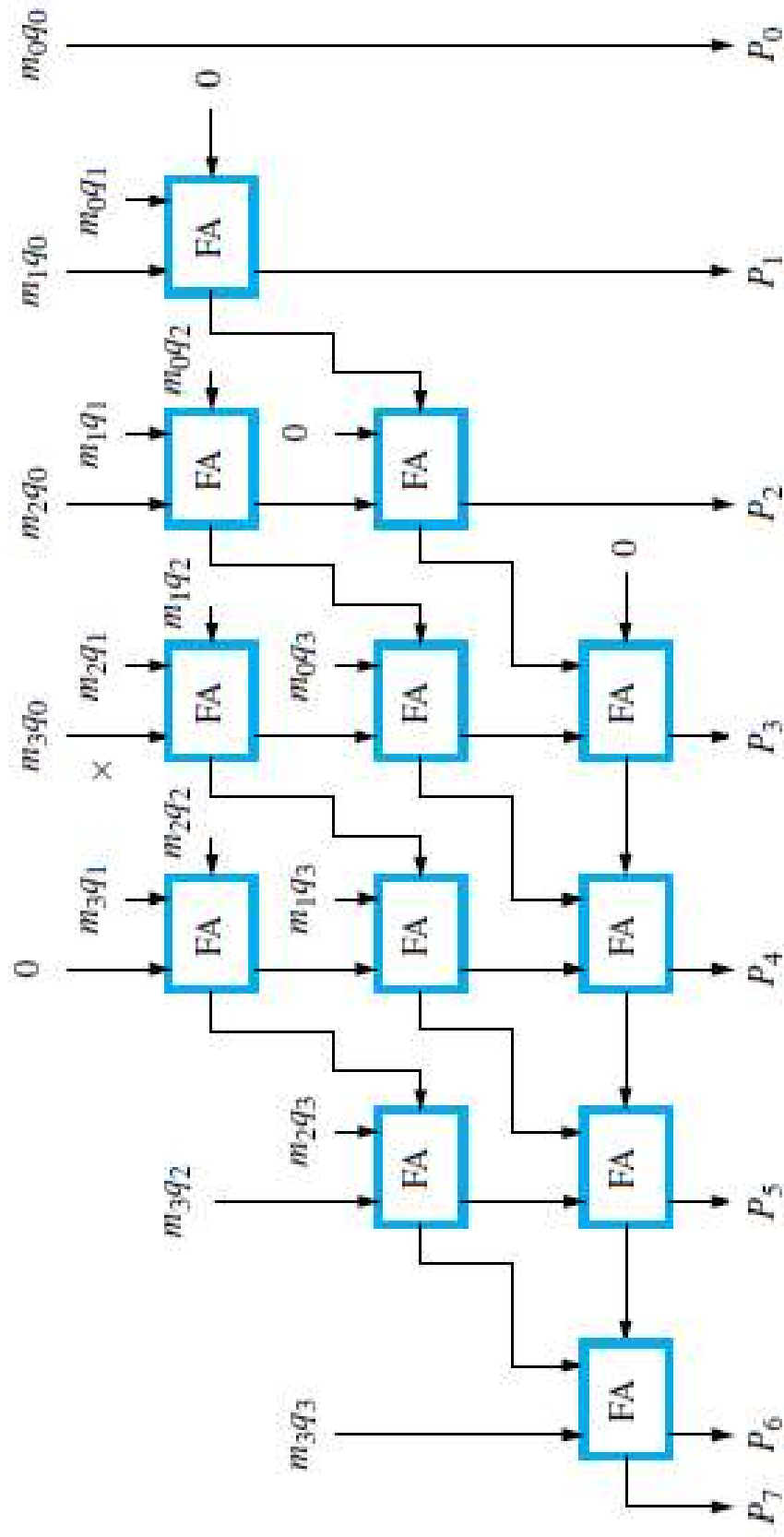
$m_3 m_2 m_1 m_0$
 $q_3 q_2 q_1 q_0$



Carry Save Adder



Timing analysis



Overflow

Wallace Tree Multiplier

