11.15 a) The least significant bit in W_{ROM} corresponds to the least significant bit in any of the coefficients a_i. The most significant bit in W_{ROM} is determined by the most significant bit in the ROM. Hence, by the value with the largest magnitude that is stored in the ROM. This value is equal to: $max\ \{\ \sum a_{i+},\ \sum a_i\ \}$

That is the sum of all positive coefficients or the negative of the sum of all negative coefficients. The word length of the ROM, i.e., W_{ROM} determine the width of the shift-accumulator while W_d effect the execution time.

b) The throughput is inversely proportional to the largest value of W_d and W_{ROM}.