For this Problem connect with 4 inputs and 1 output

4) Consider the following logic circuit consisting of a decoder and a multiplexer.

(a) Determine $f = f(a_1, a_0, b_1, b_0)$, either in the form of a truth table or in the form of a mathematical function. Assume that a_1, b_1 are the more signficant bits and a_0, b_0 are the less significant bits.

(b) Compute the cost (number of gates plus inputs, not counting NOT gates) of the decoder (including the En input), assuming it is implemented using AND, OR, NOT gates.

(c) Compute the cost (number of gates plus inputs, not counting NOT gates) of the multiplexer, assuming it is implemented using AND, OR, NOT gates.

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