1. In the implementation of carry lookahead adder, the propagation bit is obtained from
\[ p_i = a_i + b_i. \]
However, in the logic implementation of the adder, \( p_i \) is produced through an XOR gate
(see slide pp. 33 of the “Arithmetic Logic Unit” lecture). This is to reduce the gate count
of the adder and it works. Please justify.