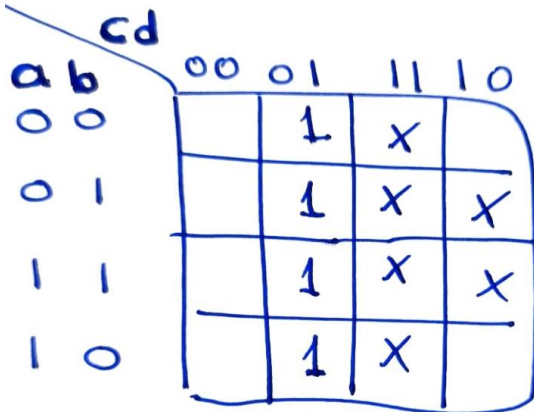




1. Simplify the function represented by Karnaugh map

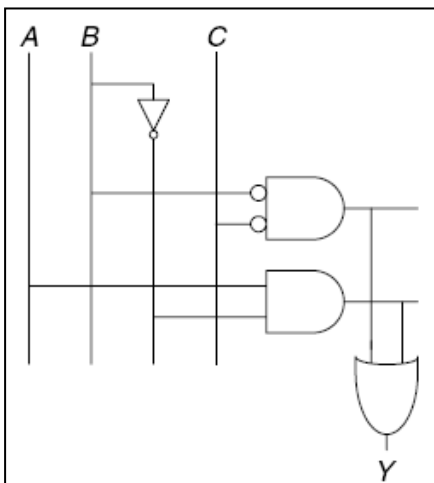


2. Simplify the following Boolean function using Karnaugh map

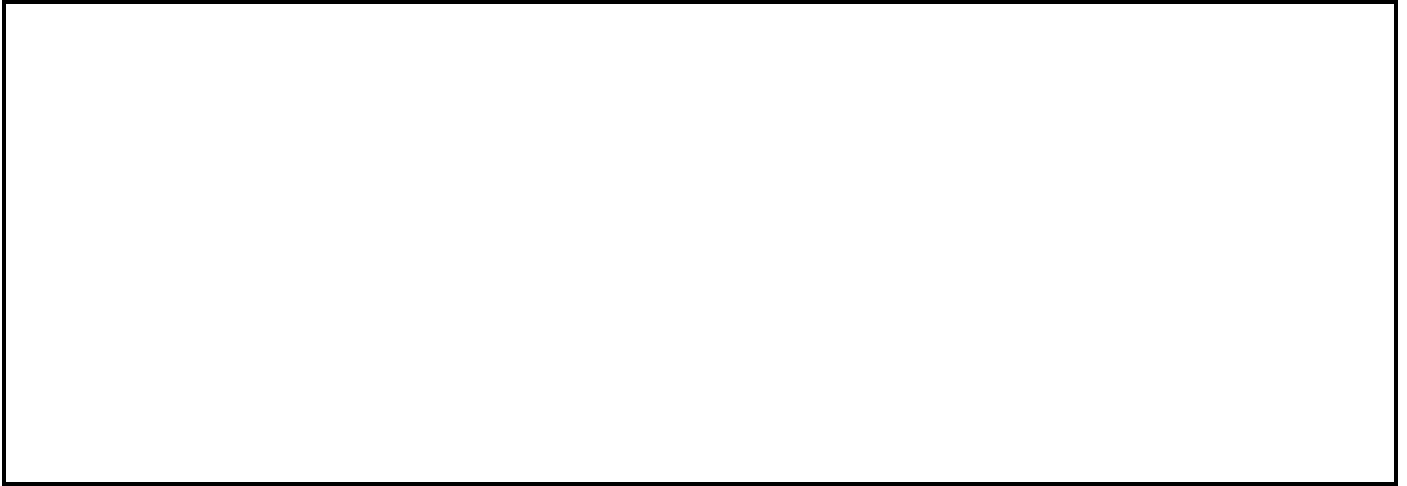
$$f(a,b,c) = \bar{a}c + ab + a\bar{b}c + \bar{a}b\bar{c}$$

3. Concerning the logic diagram shown:

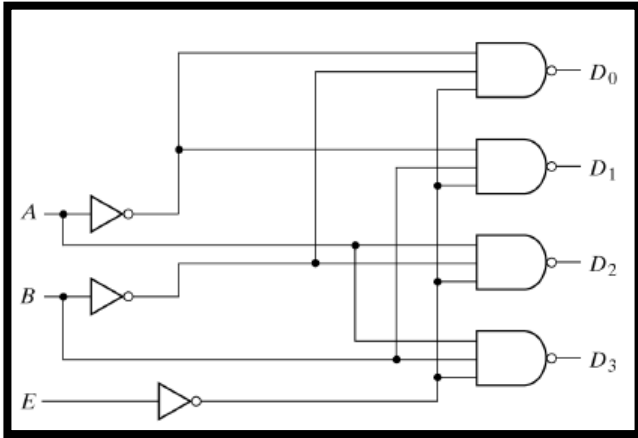
- a) Find the **truth table** for the logic diagram shown below
b) Find the expression for the **Boolean function Y**



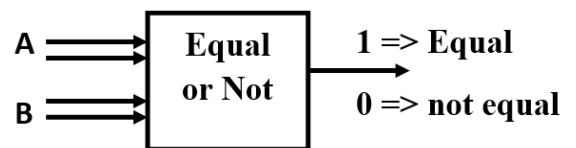
4. **Design** a circuit that can accept a **2-bits number** and outputs the **square** of that number.



5. For the logic circuit shown below, write down the **Boolean equations** for outputs and then Construct the **truth table**



6. Design a circuit to perform the **comparison between two 2-bit numbers**, if they are equal, the output will be one, otherwise the output will be zero



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