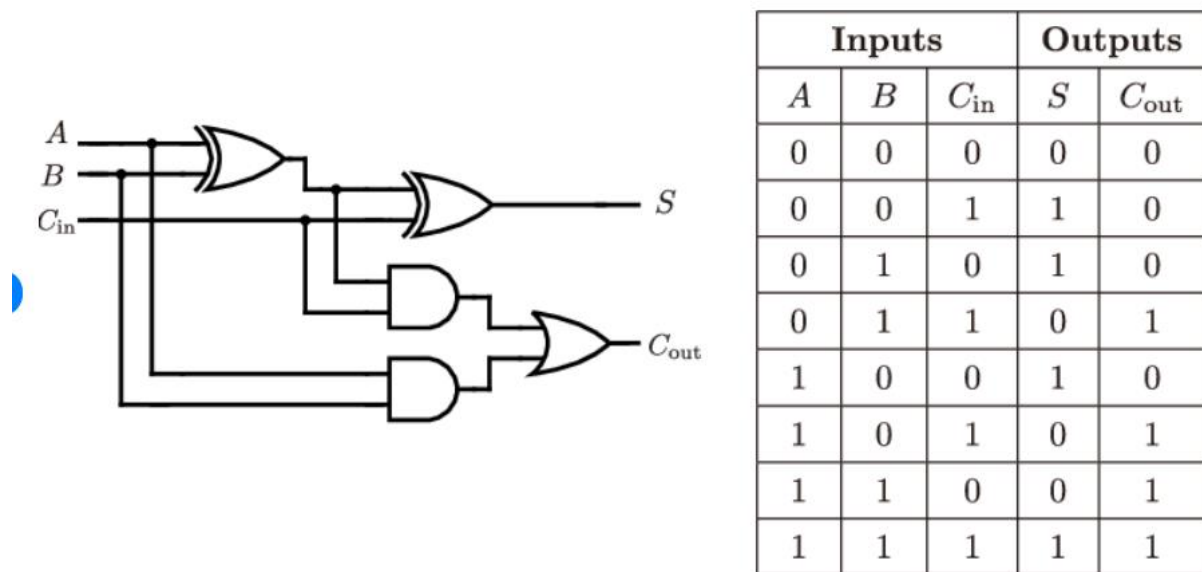


FULL ADDER

Full Adder:

A **Full Adder** is a **combinational logic circuit** that performs the addition of **three binary inputs**: two significant bits (**A** and **B**) and a **carry-in bit (C_{in})**. It produces two binary outputs: the **sum (S)** and the **carry-out (C_{out})**.

Circuit Diagram:



Logic Equations:

$$\text{Sum} = A \oplus B \oplus C_{in}$$

$$\text{Carry-out} = (A \cdot B) + (C_{in} \cdot (A \oplus B))$$