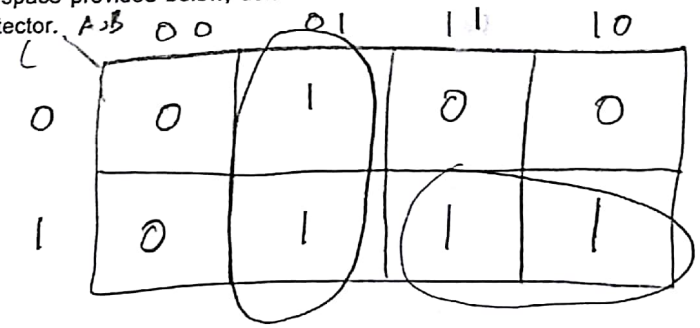
Create the Truth Table

In the space provided below, draw the truth table for the 3-input prime number detector.

Dec	A B C	output
0	0 0 0	0
1	0 0 1	0
2	0 1 0	1
3	0 1 1	1
4	1 0 0	0
5	1 0 1	1
6	1 1 0	0
7	1 1 1	1

Derive the Minimized SOP Logic Expression using a K-map

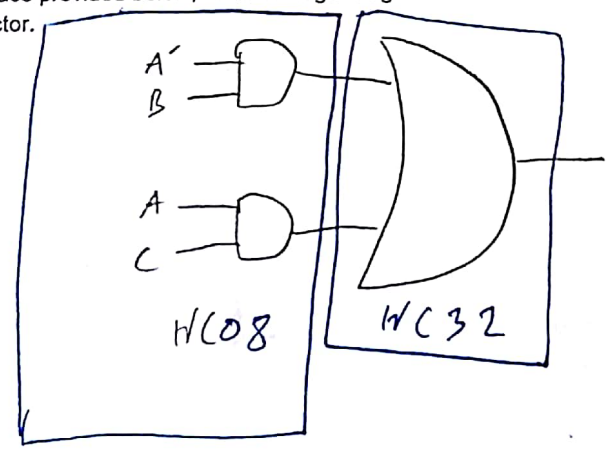
In the space provided below, derive the minimized SOP logic expression using a K-map for the 3-input prime number detector.



$(A'B) + (AC)$

Draw the Logic Diagram for the Minimized SOP Logic Expression

In the space provided below, draw the logic diagram for the minimized SOP logic expression for the 3-input prime number detector.



Map the Logic Diagram for your SOP Circuit into Available ICs in your Parts Kit

In the above logic diagram, draw rectangles around the logic operations that can be implemented within a single logic IC from your parts kit. Write the part number next to the rectangle.