Experiment-2

To design and analyze the circuit for Full adder and Full sub tractor using Logic Gates.

Full adder

- **Full Adder** is the **adder** which adds three inputs and produces two outputs.
- The first two inputs are A and B and the third input is an input carry as C-IN.
- The output carry is designated as C-OUT and the normal output is designated as S which is SUM.

MCQ

How many bit added by Full adder circuit.

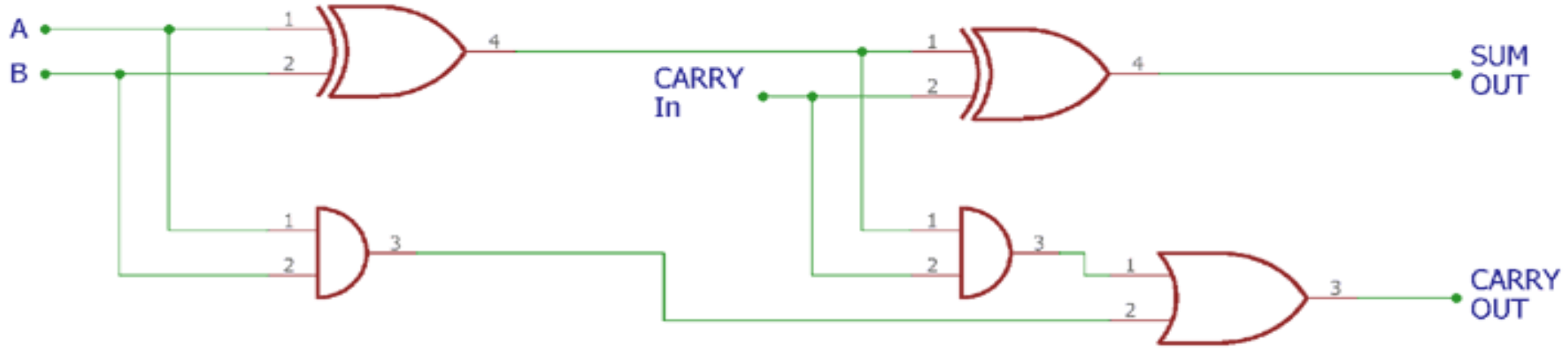
(a)1

(b)2

(c) 3

(d) 4

Full Adder



Full-Adder Circuit

MCQ

XOR gate produces 1 out put when……

(a)All input zero

(b) All input one

(C) Both a and b

(d) None of the above

MCQ

How many input and output in full adder circuit?

(a)2,2

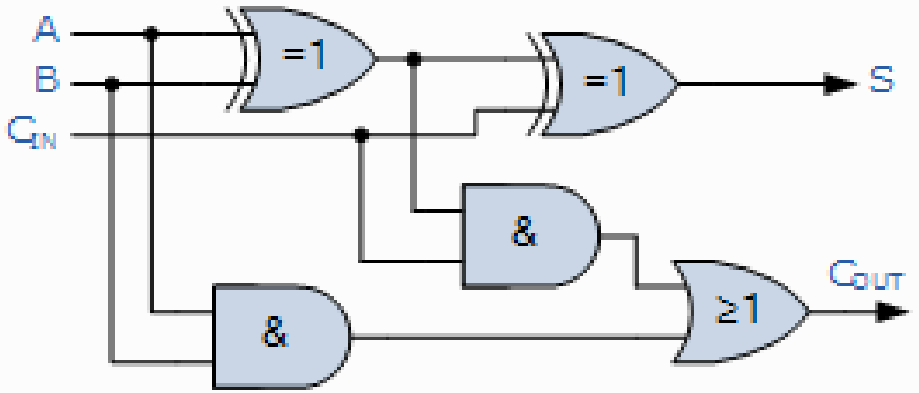
(b)3,1

(c) 3,2

(d)3,3

Symbol with truth table of full adder

Symbol



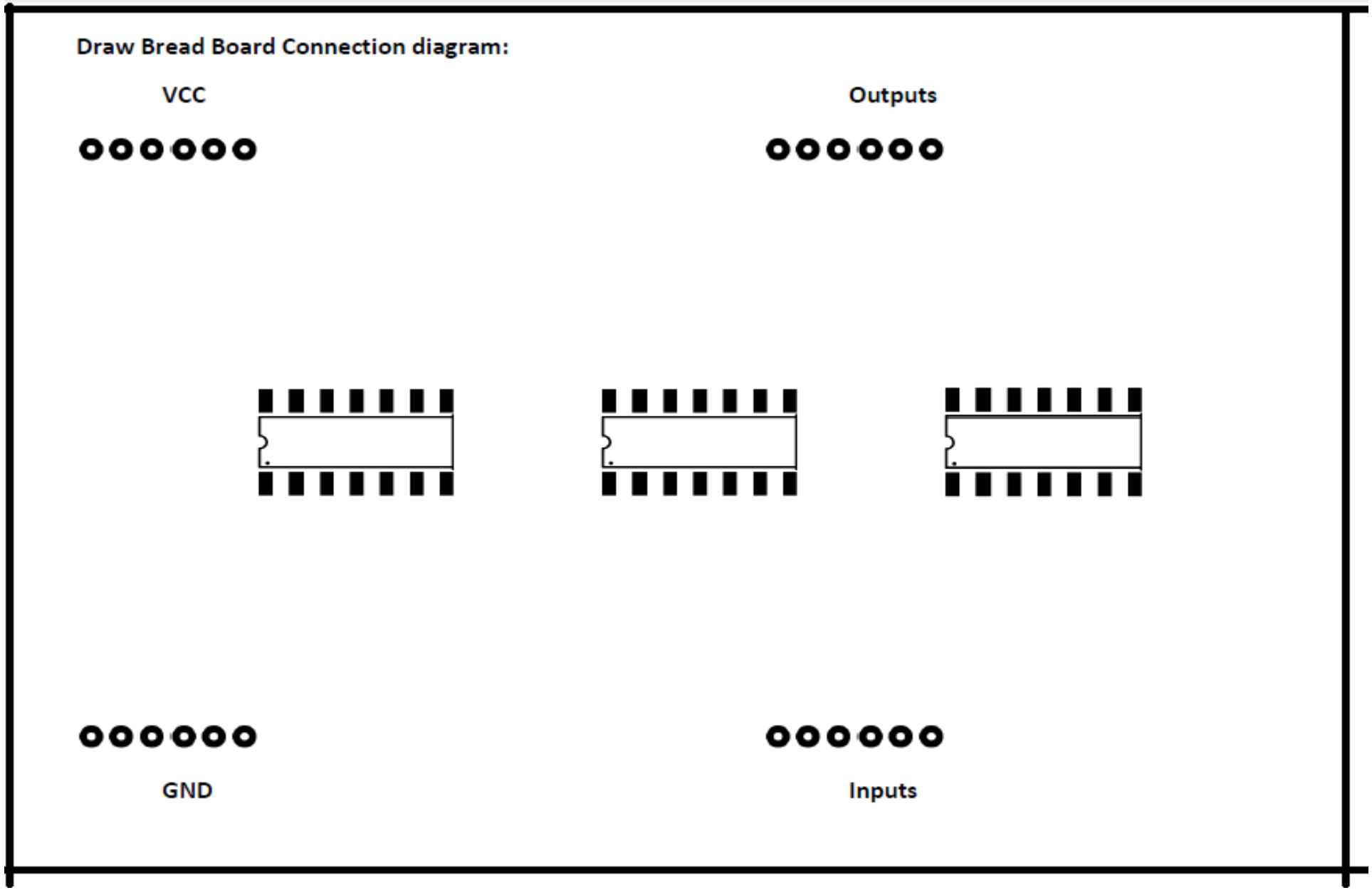
Truth Table

C-in	B	A	Sum	C-out
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1

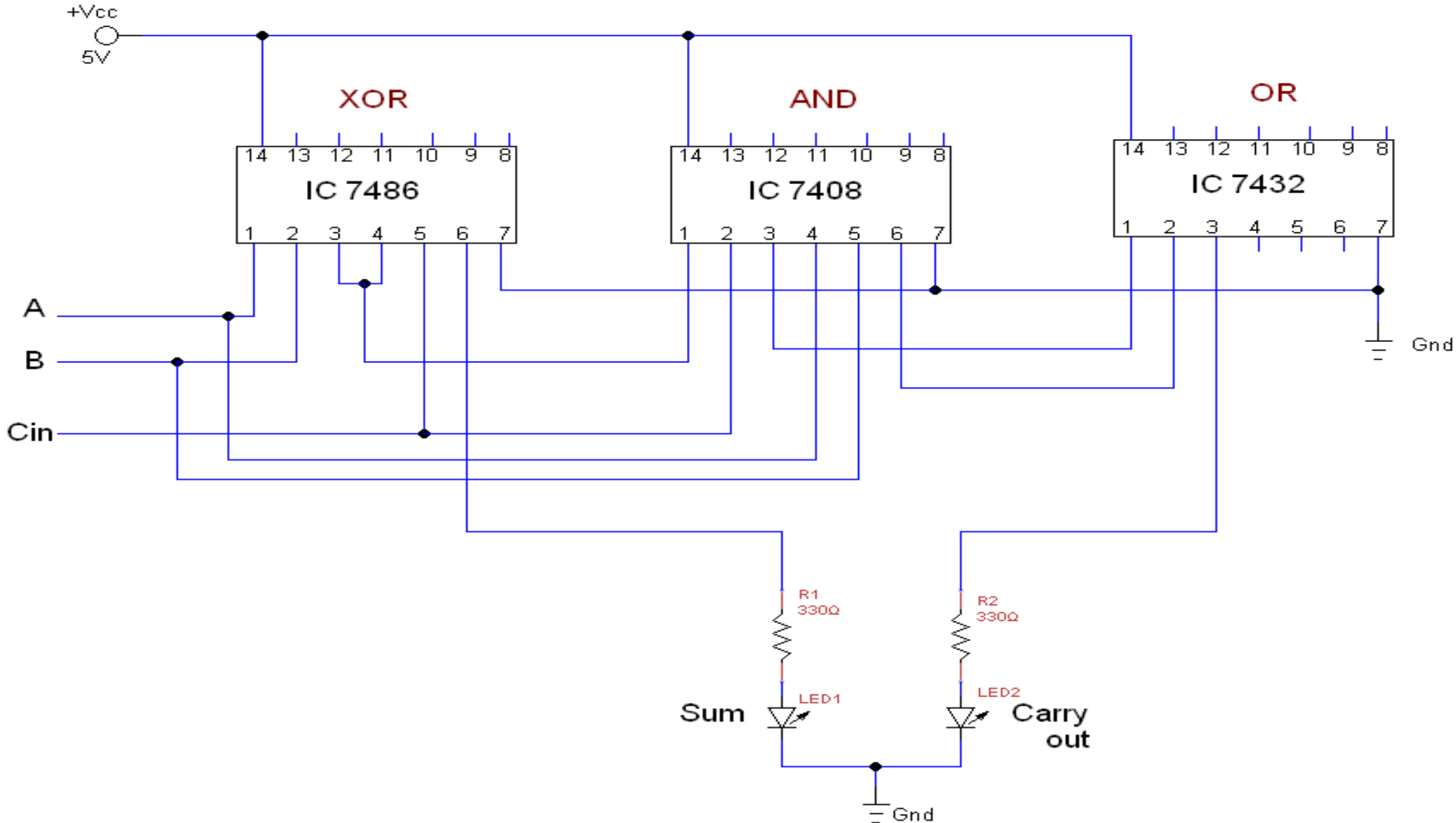
Which IC number for X-OR gate.

(a) 7432
(b) 7468
(c) 7486
(d) 7423

Bread Board Connection



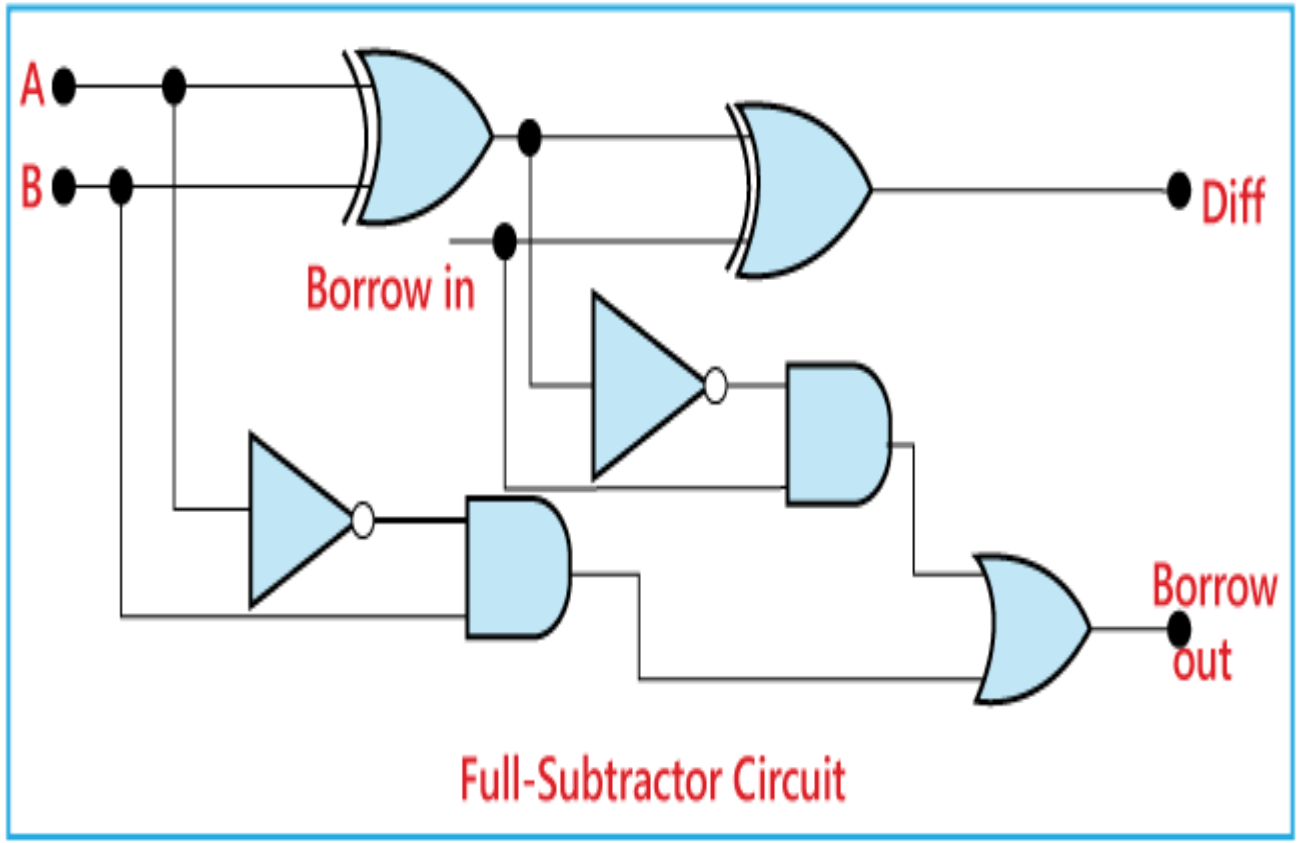
Full Adder Circuit Diagram



Full Substractor

- The **full subtractor** is a combinational circuit which is used to perform subtraction of three input bits: the minuend , subtrahend , and borrow in .
- The **full subtractor** generates two output bits: the difference and borrow out .

Symbol with truth table of full subs tractor



A	B	B_{in}	D	B_{out}
0	0	0	0	0
0	0	1	1	1
0	1	0	1	1
0	1	1	0	1
1	0	0	1	0
1	0	1	0	0
1	1	0	0	0
1	1	1	1	1

Draw Bread Board Connection diagram: