

Logic revision

- Draw truth table for AND gate
- Draw logic diagram AND gate
- Write notation (symbol) AND gate

- Draw truth table for OR gate
- Draw logic diagram OR gate
- Write notation (symbol) OR gate

- Draw truth table for NOT gate
- Draw logic diagram NOT gate
- Write notation (symbol) NOT gate

- Draw truth table for XOR gate
- Draw logic diagram XOR gate
- Write notation (symbol) XOR gate

Complete a column (down) at a time

Step 1:
Complete A
and B column

Step 2:
Complete
A OR B column

Final step:
Or together A and
B with A or B

Inputs				
A	B	A.B	A+B	A.B + A+B
0	0			
0	1			
1	0			
1	1			

Complete the truth table.

[4]

A	B	$A.B$	$\overline{A.B}$	\overline{B}	$\overline{A.B} + \overline{B}$
0	0				
0	1				
1					
1					

$A.B$	$\overline{A.B}$	\overline{B}	$\overline{A.B} + \overline{B}$
0	1	1	1
0	1	0	1
0	1	1	1
1	0	0	0

(a) State the logical operator used in the following truth table:

[1]

Input		Output
A	B	C
0	0	0
1	0	1
0	1	1
1	1	0

Award one mark for the following:

- XOR

Tick (✓) **one box only** to show the Boolean expression that represents the function described by the truth table. [1]

Input		Output
P	Q	R
0	0	0
1	0	1
0	1	0
1	1	0

$$R = P \oplus Q$$

$$R = \overline{P} \cdot \overline{Q}$$

$$R = P \cdot \overline{Q}$$

$$R = P + Q$$

Award one mark for the following:

- $R = P \cdot \overline{Q}$