Example

P: Pressure Sensor → 0=Safe/1=Unsafe

T: Temperature Sensor → 0=Safe/1=Unsafe

A: Alarm → 0=Alarm off/1=Alarm on

P	T	A
0	0	0
0	1	1
1	0	1
1	1	1

Example #2

W: Window sensor → 0=Off/1=On (closed) Open

D: Door Sensor → 0=Closed/1=Open

K: Keys → 0=No keys/1=keys

$S = K\bar{D} + K\bar{W}$

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AOI Logic Analysis Worksheet

①

X	Y	F_1	TP1	TP2	TP3	TP4
0	0	0	1	0	1	1
0	1	1	0	0	1	0
1	0	1	0	0	0	0
1	1	0	0	0	0	

X	Y	F
0	0	0
0	1	1
1	0	1
1	1	0

$F_1 = \bar{X}Y + X\bar{Y}$

② $F_1 = X \oplus Y$

R	S	T	F_2	TP1	TP2	TP3	TP4	TP5	TP6	TP7	TP8	TP9
0	0	0	0	1	0	0	0	1	0	0	1	0
0	0	1	0	1	0	0	0	0	0	0	1	0
0	1	0	1	1	1	1	1	1	0	0	0	0
0	1	1	0	1	1	0	0	0	0	0	0	0
1	0	0	1	0	0	0	0	1	0	0	1	1
1	0	1	1	0	0	0	0	0	0	0	1	1
1	1	0	0	0	0	0	0	1	1	0	0	0
1	1	1	1	0	0	0	1	0	1	1	0	0

Signature:	Date: 11/14/24	Team Members:
Witness:	Date:	
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CONCLUSIONS

(A) Take the inputs, consider their interactions and test points, and then evaluate the output

(B) Pain

(C) Finding the test points was much more tedious, but made it easier in the end.

(D) Seems like much, calculations can be easier than if they're not identical

$$A+B = A\bar{B} + \bar{A}B$$

These will always be the same!

11/5/24

Signature:	Date: 11/5/24	Team Members:
Witness:	Date:	

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