

(b) Consider the rules given in the following table:

Input	Binary value	Description
L	0	dark
	1	light
M	0	no motion detected
	1	motion detected
S	0	no sound detected
	1	sound detected

A security system uses sensors to sound an alarm if an intruder is detected.

The alarm sounding is represented by the output **A = 1**.

The alarm sounds if it is dark and if either motion or sound or both motion and sound are detected.

(i) Write the logic expression for the security system.

A =

..... [2]

(ii) Complete the truth table for the security system.

L	M	S	Working space	A
0	0	0		
0	0	1		
0	1	0		
0	1	1		
1	0	0		
1	0	1		
1	1	0		
1	1	1		