

### Karnaugh's maps for Task 3

For the Moore's state machine implementation:

		y <sub>2</sub> y <sub>1</sub>			
		00	01	11	10
W	0	0	0	X	0
	1	0	1	X	1

		y <sub>2</sub> y <sub>1</sub>			
		00	01	11	10
W	0	0	0	0	1
	1	1	0	1	0

Figure 1: Maps for  $Y_2$  (left) and  $Y_1$  (right) functions.

Where  $Y_2 = W \cdot y_1 + W \cdot y_2$ , and  $Y_1 = W \cdot \overline{y_2} \cdot \overline{y_1}$ . From the transitions table, it is simple to see that  $Z = y_1$ .

And for the Mealy's state machine implementation:

		W	
		0	1
y	0	0	1
	1	0	1

		W	
		0	1
y	0	0	1
	1	0	0

Figure 2: Maps for  $Y$  (left) and  $Z$  (right)

Where from the left map  $Y = W$ , and from the right table  $Z = \overline{y} \cdot W$ .