

HW 3

1. - 1) $AD + \bar{A}\bar{D}$

2) $B\bar{C} + A\bar{D}$

3) $A\bar{D} + B$

4) $BC\bar{D} + \bar{B}D$

2. - 2 term $WX\bar{Y} + \bar{W}\bar{X}\bar{Y}$

$$Y = \bar{Y}(WX + \bar{W}\bar{X})$$

- 3 term $\bar{W}XY + \bar{W}\bar{X}\bar{Y} + \bar{Z}$

$$= \bar{W}(XY + \bar{X}\bar{Y}) + \bar{Z}$$

- 4 term $ABC + \bar{A}\bar{B}C + \bar{A}B\bar{C} + A\bar{B}\bar{C}$

$$= C(AB + \bar{A}\bar{B}) + \bar{C}(\bar{A}B + A\bar{B})$$

4. $\sum_1 = 1$

$\sum_2 = 0$

$\sum_3 = 0$

$\sum_4 = 1$

$$\begin{array}{r} 111 \\ +010 \\ \hline 1001 \end{array}$$

$$\begin{array}{r} 10110 \\ +11001 \\ \hline 101111 \end{array}$$

$\sum_1 = 1$

$\sum_5 = 0$

$\sum_2 = 1$

$\sum_6 = 1$

$\sum_3 = 1$

$\sum_4 = 1$

8.	1	2	3	4	5
	$\begin{array}{r} 00 \\ +01 \\ \hline 01 \end{array}$	$\begin{array}{r} 01 \\ +01 \\ \hline 10 \end{array}$	$\begin{array}{r} 11 \\ +11 \\ \hline 110 \end{array}$	$\begin{array}{r} 10 \\ +00 \\ \hline 10 \end{array}$	$\begin{array}{r} 00 \\ +10 \\ \hline 10 \end{array}$
	$\sum_1 = 1$	$\sum_1 = 0$	$\sum_1 = 0$	$\sum_1 = 0$	$\sum_1 = 0$
	$\sum_2 = 0$	$\sum_2 = 1$	$\sum_2 = 1$	$\sum_2 = 1$	$\sum_2 = 1$
	$Cost = 0$	$Cost = 0$	$Cost = 1$	$Cost = 0$	$Cost = 0$
6	7	8	9	10	
	$\begin{array}{r} 10 \\ +00 \\ \hline 10 \end{array}$	$\begin{array}{r} 11 \\ +00 \\ \hline 11 \end{array}$	$\begin{array}{r} 11 \\ +11 \\ \hline 110 \end{array}$	$\begin{array}{r} 01 \\ +11 \\ \hline 100 \end{array}$	$\begin{array}{r} 00 \\ +01 \\ \hline 01 \end{array}$
	$\sum_1 = 0$	$\sum_1 = 1$	$\sum_1 = 0$	$\sum_1 = 0$	$\sum_1 = 1$
	$\sum_2 = 1$	$\sum_2 = 1$	$\sum_2 = 1$	$\sum_2 = 0$	$\sum_2 = 0$
	$Cost = 0$	$Cost = 1$	$Cost = 1$	$Cost = 1$	$Cost = 0$

Each number corresponds to each timing space.