a) $(A \cdot B) + (\overline{C \cdot D \cdot B})$

A	B	C	D	$A \cdot B$	$\overline{(C \cdot D \cdot B)}$	S
1	1	1	1	1	0	1
1	1	1	0	1	1	1
1	1	0	1	1	1	1
1	1	0	0	1	1	1
1	0	1	1	0	1	1
1	0	1	0	0	1	1
1	0	0	1	0	1	1
1	0	0	0	0	1	1
0	1	1	1	0	0	0
0	1	1	0	0	1	1
0	1	0	1	0	1	1
0	1	0	0	0	1	1
0	0	1	1	0	1	1
0	0	1	0	0	1	1
0	0	0	1	0	1	1
0	0	0	0	0	1	1

b) $(A+B) \cdot \overline{C}$

A	B	C	$A+B$	$\overline{C}$	S
1	1	1	1	0	0
1	1	0	1	1	1
1	0	1	1	0	0
1	0	0	1	1	1
0	1	1	1	0	0
0	1	0	1	1	1
0	0	1	0	0	0
0	0	0	0	1	0

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c) $S = [\overline{(A+B)}+C] \cdot [\overline{D \cdot (B+C)}]$

A	B	C	D	$\overline{A+B}$	$\overline{(A+B)}+C$	$B+C$	$\overline{[D \cdot (B+C)]}$	S
1	1	1	1	0	1	1	0	0
1	1	1	0	0	1	1	1	1
1	1	0	1	0	0	1	0	0
1	1	0	0	0	0	1	1	0
1	0	1	1	0	1	1	0	0
1	0	1	0	0	1	1	1	1
1	0	0	1	0	0	0	1	0
1	0	0	0	0	0	0	1	0
0	1	1	1	0	1	1	0	0
0	1	1	0	0	1	1	1	1
0	1	0	1	0	0	1	0	0
0	1	0	0	0	0	1	1	0
0	0	1	1	1	1	1	0	0
0	0	1	0	1	1	1	1	1
0	0	0	1	1	1	0	1	1
0	0	0	0	1	1	0	1	1

d) $S = A \cdot B \cdot C + [\overline{(A \cdot B) \cdot C}]$

A	B	C	$A \cdot B \cdot C$	$\overline{(A \cdot B)}$	$\overline{(A \cdot B) \cdot C}$	S
1	1	1	1	0	0	1
1	1	0	0	0	0	0
1	0	1	0	1	1	1
1	0	0	0	1	0	0
0	1	1	0	1	1	1
0	1	0	0	1	0	0
0	0	1	0	1	1	1
0	0	0	0	1	0	0