CS2700 Homework 2

Phillip Janowski (pajmc2@mail.umsl.edu)

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Question 1.

11.1

(a) $ABC + \overline{ABC}$

ABC	$\overline{ABC}$	ABC	$\overline{ABC}$	$ABC + \overline{ABC}$
000	111	0	1	1
001	110	0	0	0
010	101	0	0	0
011	100	0	0	0
100	011	0	0	0
101	010	0	0	0
110	001	0	0	0
111	000	0	0	1

(b) $ABC + A\overline{BC} + \overline{ABC}$

ABC	$\overline{ABC}$	ABC	$\overline{ABC}$	$A\overline{BC}$	$ABC + A\overline{BC} + \overline{ABC}$
000	111	0	1	0	1
001	110	0	0	0	0
010	101	0	0	0	0
011	100	0	0	0	0
100	011	0	0	1	1
101	010	0	0	0	0
110	001	0	0	0	0
111	000	1	0	0	1

(c) $A(B\overline{C} + \overline{B}C)$

ABC	$\overline{ABC}$	$B\overline{C}$	$\overline{B}C$	$A(B\overline{C} + \overline{B}C)$
000	111	0	0	0
001	110	0	1	0
010	101	1	0	0
011	100	0	0	0
100	011	0	0	0
101	010	0	1	1
110	001	1	0	1
111	000	0	0	0

(d) $(A + B)(A + C)(\overline{A} + \overline{B})$

ABC	$\overline{ABC}$	$A + B$	$A + C$	$\overline{A} + \overline{B}$	$(A + B)(A + C)(\overline{A} + \overline{B})$
000	111	0	0	1	0
001	110	0	1	1	0
010	101	1	0	1	0
011	100	1	1	1	1
100	011	1	1	1	1
101	010	1	1	1	1
110	001	1	1	0	0
111	000	1	1	0	0