

5c. $Y = ABC\bar{D} + \overline{ABCD} + \overline{(A+B+C+D)}$

CD \ AB	00	01	11	10
00	1	0	1	1
01	0	0	1	1
11	0	0	0	1
10	0	0	1	1

$$\begin{aligned}
 Y &= \overline{B}\overline{C}\overline{D} + A\overline{C} + A\overline{B} + A\overline{C}\overline{D} \\
 &= \overline{B}\overline{C}\overline{D} + A(\overline{C} + \overline{B}) + A\overline{C}\overline{D} \\
 &= \overline{B}\overline{C}\overline{D} + A\overline{C}\overline{B} + A\overline{C}\overline{D} \\
 &= \overline{B}\overline{C}\overline{D} + A(\overline{C} + \overline{B} + \overline{C}\overline{D}) \\
 &= \overline{B}\overline{C}\overline{D} + A(\overline{D} + \overline{C} + \overline{B}) \\
 &= \overline{B}\overline{C}\overline{D} + A\overline{D} + A\overline{C} + A\overline{B} \\
 Y &= \overline{B+C+D} + A\overline{B}\overline{C}\overline{D}
 \end{aligned}$$

A B C D

