



## **Answers**

1. (a)  $X = [(A + B) B C]'$
2. (b) There are 7 1's in the Y column of the truth table
3. a)  $X = A'B'D' + CD'$   
b)  $X = A' + B' + C + D$   
c)  $X = AB' + AC + B'C$
5. a) 8 two-input NAND gates needed.  
b) 3 two-input NOR gates needed.