

Jetic Gū

Columbia College

23. Januar 2020

Binary Identities

1. $X + 0 = X$

Distributive

2. $X \cdot 1 = X$

14. $X(Y + Z) = XY + XZ$

3. $X + 1 = 1$

15. $X + (YZ) = (X + Y)(X + Z)$

4. $X \cdot 0 = 0$

DeMorgan's

5. $X + X = X$

16. $\overline{X + Y} = \bar{X} \cdot \bar{Y}$

6. $X \cdot X = X$

17. $\overline{X \cdot Y} = \bar{X} + \bar{Y}$

7. $X + \bar{X} = 1$

Other useful stuff:

8. $X \cdot \bar{X} = 0$

A. $X + XY = X$

9. $\overline{\bar{X}} = X$

B. $XY + X\bar{Y} = X$

Communicative

C. $X + \bar{X}Y = X + Y$

10. $X + Y = Y + X$

D. $X(X + Y) = X$

11. $XY = YX$

E. $(X + Y)(X + \bar{Y}) = X$

Associative

F. $X(\bar{X} + Y) = XY$

12. $X + (Y + Z) = (X + Y) + Z$

13. $X(YZ) = (XY)Z$