

Name _____

Boolean Algebra Pretest I

Simplify the following Expressions using Boolean Algebra!

1. $AB + \overline{AB}$

2. $Z + ZY$

3. $DEF + FED$

4. $J + 1$

5. $(B + A)(\overline{B} + \overline{A})$

6. $\overline{J} + \overline{W}W$

7. $IC(VW + \overline{VW})T$

8. $(X + Y)(W + Y)$

9. $I(S + \overline{NOTS} + \overline{SWIM})$

10. $A0$

11. $HI(W + \overline{ABC} + F + \overline{AB})\overline{IH}$

12. $(B + C)(D + E)$

13. $(F + YES)(U + YES)(N + YES)$

14. $(I + V)(I + \overline{W})(I + X)$

Factor Completely!

15. $QN + MQ + QP$

16. $J + HI$

17. $AH + \overline{AHW}$

18. $AB + CDE$

DeMORGANIZE Completely!

19. $C + \overline{ABC} + A$

20. \overline{AMN}

21. $\overline{(J + K)(L + M)}$

22. $\overline{\overline{A}(B + \overline{CD})}$

23. $\overline{\overline{AB}}$

24. $\overline{D + E + DE}$

Simplify the following Expressions using Boolean Algebra!

25. $\overline{\overline{ABC}} + \overline{A + \overline{C}}$

26. $AC + AD + \overline{AC} + (B + D)(\overline{B}\overline{D})$

27. $\overline{AB}\overline{CD} + \overline{ABC}\overline{D} + \overline{BCD} + \overline{ABCD}$

28. $\overline{(A + \overline{B})(\overline{A} + C)(B + C)}$

PROVE:

$$\overline{A + B} = \overline{A}\overline{B}$$