

Boolean Algebra Homework # 3

DeMorgan's Law. Plus review work

DeMorganize the following expressions. It is OK if your answer is not a minterm.

1. $\overline{R+S+T+U} =$

2. $\overline{(\overline{S+T})\overline{R+P}} =$

3. $\overline{D+E+DEW} =$

4. $\overline{(\overline{S+T})(\overline{R+P})+ST} =$

5. $\overline{RS+TU} =$

6. $\overline{(\overline{S+T})(\overline{R+P})(S+P)} =$

Simply the following expressions. Your final answer should be a minterm.

7. $\overline{ABC+Z+T} =$

8. $\overline{D+E+F+G} =$

9. $\overline{(A+B)(C+D)} =$

10. $\overline{\overline{A+JK}} =$

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

12. $\overline{CAB+F+E} =$

13. $\overline{ABC} + \overline{(\overline{ABC})} =$

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

Name _____

Continue simplifying the following expression using DEMorgan's Law. All answer should be minterms.

$$15. \overline{(J+K)(L+M)} =$$

$$16. \overline{\overline{(Q+R)(S+T)}\overline{Q}\overline{R}\overline{S}} =$$

$$17. \overline{RS+TV+\overline{R}+\overline{S}} =$$

$$18. \overline{D\overline{E}(E+\overline{GH})+\overline{E}} =$$

Mixed review problems. All final answer should be minterms.

$$19. (\overline{W}\overline{X}+Y)(\overline{Y}(W+X))+Z =$$

$$20. (\overline{JK+G})\overline{L}+G+\overline{H}+JK+\overline{L} =$$

$$21. \overline{\overline{(QKB\overline{W})}\overline{(QKB\overline{W})}} =$$

$$22. JL(LMNVW+\overline{J}\overline{K}PQYZ) =$$

$$23. A+\overline{AB\overline{W}}+AK+\overline{\overline{B\overline{W}}} =$$

$$24. VW+\overline{V}+DG+\overline{G} =$$

$$25. \overline{AB+CD}(\overline{AB}) =$$

$$26. \overline{\overline{VW}}+\overline{V}+\overline{DG+\overline{G}} =$$

$$27. \overline{A+\overline{B}+C+\overline{D}}+AC =$$

$$28. \overline{V+\overline{W}+R(\overline{D+\overline{D}})} =$$