demorgans QUIZ **PRACTICE**.doc

Name_____

As much as possible, simplify the following expressions using DeMorgan's laws and Boolean algebra. **ANSWERS MUST BE LEFT IN SUM OF PRODUCTS FORM.** Show your work!

1) $\overline{ABC\overline{D}}$

$\bar{A}+\bar{B}+CD$

2) $\overline{(A+\bar{B})(\bar{A}+B)}$

$\bar{A}B+A+B$

$A+B$

3) $\overline{\bar{A}\bar{B}C+B\bar{C}}$

$(A+B+\bar{C})(\bar{B}+C)$

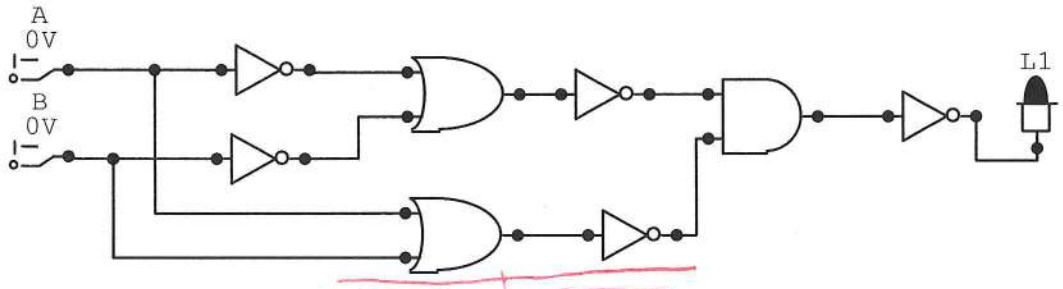
$A\bar{B}+AC+BC+\bar{B}\bar{C}$

4) $\overline{\bar{A}\bar{B}}\bullet\overline{(\bar{A}+B)}$

$A\bar{B}+A\bar{B}$

$A\bar{B}$

5) Use your knowledge of DeMorgan's laws and Boolean algebra to simplify the following circuit. Show you work.



$(\overline{\bar{A}+\bar{B}})\,(\overline{A+B})$

$\bar{A}+\bar{B}+A+B$

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