

Computer Programming
Boolean Algebra Worksheet #3

Name -

Answer the following. Denote the ordered pairs and ordered triples with parentheses and commas such as: (1, 0, 1). You must use and label truth charts on attached paper to solve these problems and receive full credit. Your final answers must be written on this page however. By the way, an ordered pair that "satisfies" an expression is one that makes it TRUE.

1. Simplify the following as much as possible, circling your final expression. Then, find all ordered pairs (A, B) that satisfy the expression.

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

2. Simplify the following as much as possible, circling your final expression. Then, find all ordered pairs (A, B) that satisfy the expression

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

3. Simplify the following as much as possible, circling your final expression. Then, find all ordered triples (A, B, C) that satisfy the expression

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

4. Simplify the following as much as possible, circling your final expression. Then, find all ordered triples (A, B, C) that satisfy the expression

$$A(B \oplus C) + \overline{A}(B A)$$

5. Circle all of the following expressions that are equivalent to $\overline{(\overline{A} B)} C$. Two expressions are "equivalent" if they have the same exact set of solutions.

(a) $\overline{A} B + \overline{C}$

(b) $\overline{A} + \overline{B} + C$

(c) $A + \overline{B} + \overline{C}$

(d) $A \overline{B} \overline{C}$