Names: _____

COMPSCI 250 Discussion #7: Boolean Expressions

Group Response Sheet
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The individual handout gives a real Java class definition for **boolean expressions**, somewhat similar to the definition of Lisp lists in Section 4.10 (which we aren't doing this semester anyway). Note that there are *not* separate node and tree objects – a tree can be a single leaf node or a composite node with two subtrees.

Writing Exercise: Write (in real Java) the following methods to be added to this class:

1. A method `size` that returns an `int` giving the number of nodes in the calling expression's tree.

2. A method `leaves` that returns an `int` giving the number of leaves in the calling expression's tree.

3. A method `depth` that returns an `int` giving the depth of the tree, which is the number of nodes in the longest directed path from the root node to any leaf.

4. A method `eval` to return the boolean value of the calling expression.

5. (if time) A method `toString` that returns a `String` representing the expression, in an infix format like "`NOT ((true OR false) AND (false OR true))`". We're not worried about redundant parentheses.