# solving 2x2 go

How hard is it to solve 2x2 Go? See John Tromp's minimax C implementation,
`http://tromp.github.io/java/go/twoxtwo.html` which uses no-suicide Tromp-Taylor
rules with positional superko.

(What is the difference between positional superko and situational superko? Which
would take longer to solve? Why?)

Tromp implemented three versions of his program: minimax, alpha-beta, and alpha-beta
with good move ordering (pass is the first move option). The respective number of tree
nodes is more than $1 \times 10^{12}$, 19 397 529 (max depth 58), 1 446 (max depth 22, e.g. as
shown at right). The minimax value is Black wins by 1.

The tree below shows that Black wins by at least 1. (why?) A similar tree shows that
Black wins by at most 1. (Exercise: create this tree.) These two trees, each with about
50 nodes, prove that the minimax value is Black wins by 1.