AVL Runtime Proof

An upper-bound on the height of an AVL tree is **O(lg(n))**:

# of nodes (n) ≥ N(h) > $2^{h/2}$

n > $2^{h/2}$

lg(n) > h/2

2 × lg(n) > h

h < 2 × lg(n)   *, for h ≥ 1*

Proved: The maximum number of nodes in an AVL tree of height h is less than 2 × lg(n).