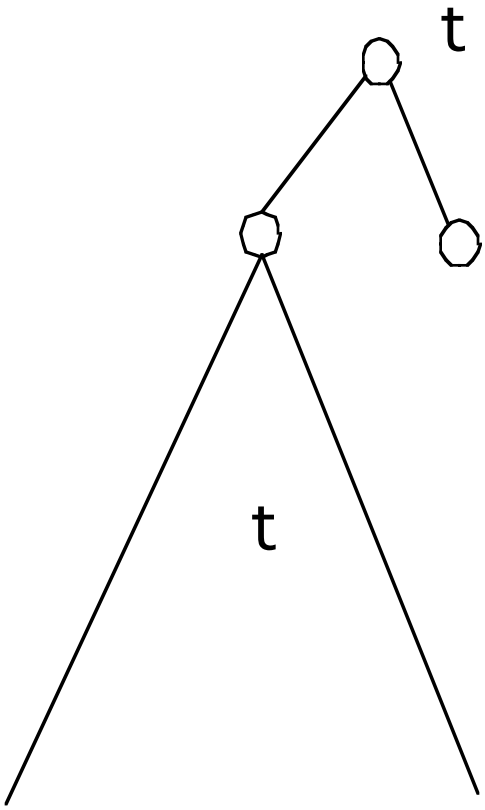
2.3. Infinite Trees

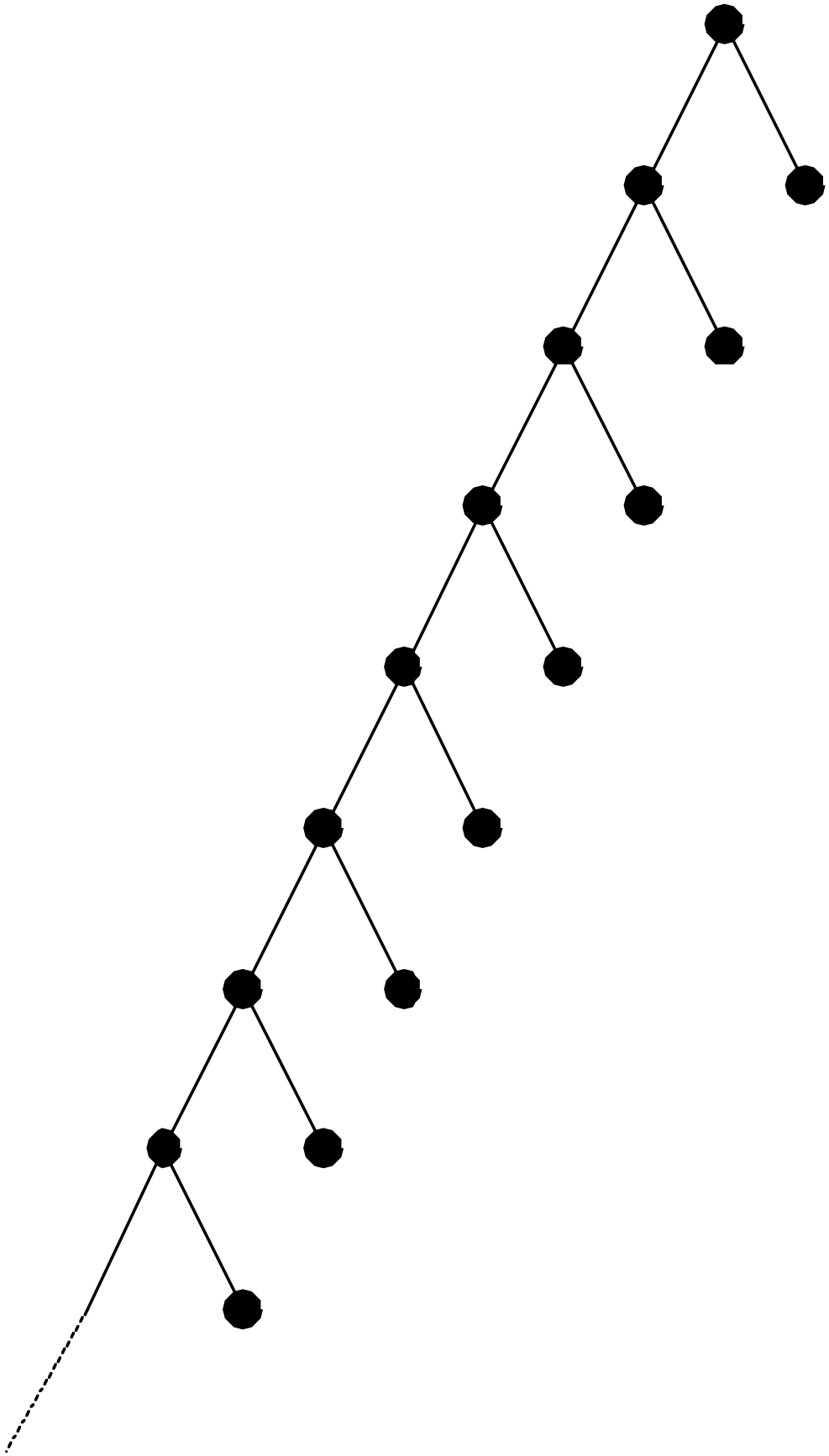
We saw in the game of Parcheesi that infinite trees are important. Here we give a short explanation how infinite trees can be defined using recursion. The game of Parcheesi illustrates that games trees sometimes can be substituted "in themselves". Another way to say that is that a certain subtree *s* of a tree *t* can be identical to *s*. This leads to equations of the form

c. $t = t \oplus a$

Graphically, this can be represented by the following graph:



The resulting infinite tree looks as follows:



The following equation defines the natural numbers:

d. $t = [t]$

We can also use two equations:

e. $t = t \oplus s$

$s = s \oplus a$