

### Axiom 7

*There exists a whole number 0.*

### Axiom 8

*Every whole number  $n$  has a successor,  $\text{succ } n$ .*

### Axiom 9

*No whole number has 0 as its successor.*

### Axiom 10

*If  $a, b \in \mathbb{W}$ , then  $a = b$  iff  $\text{succ } a = \text{succ } b$ .*

5 is a whole number because

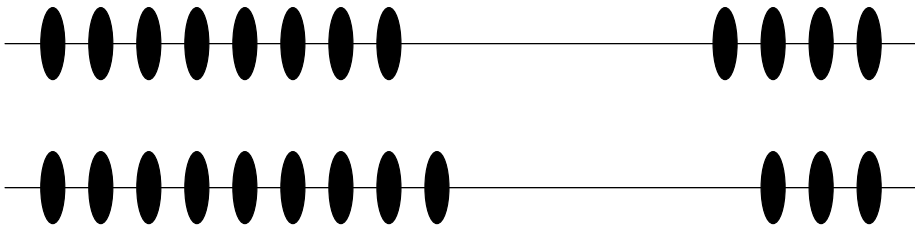
5 is a whole number because it is the successor of 4, which is a whole number because

5 is a whole number because it is the successor of  
4, which is a whole number because it is the successor of  
3, which is a whole number because

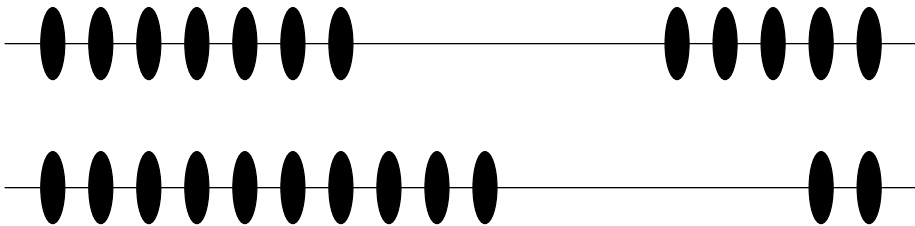
5 is a whole number because it is the successor of  
4, which is a whole number because it is the successor of  
3, which is a whole number because it is the successor of  
2, which is a whole number because

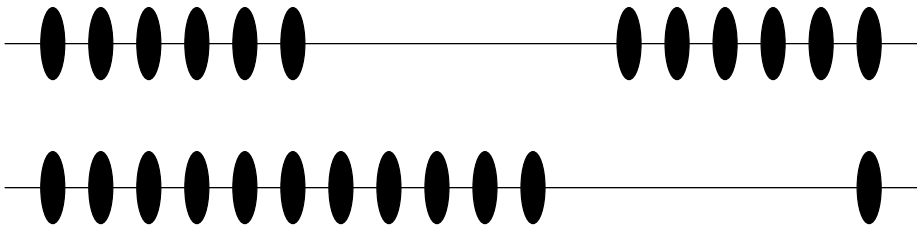
5 is a whole number because it is the successor of  
4, which is a whole number because it is the successor of  
3, which is a whole number because it is the successor of  
2, which is a whole number because it is the successor of  
1, which is a whole number because

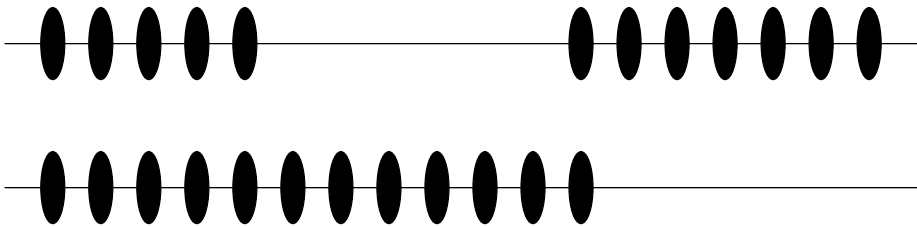
5 is a whole number because it is the successor of  
4, which is a whole number because it is the successor of  
3, which is a whole number because it is the successor of  
2, which is a whole number because it is the successor of  
1, which is a whole number because it is the successor of  
0, which is a whole number by Axiom 7.







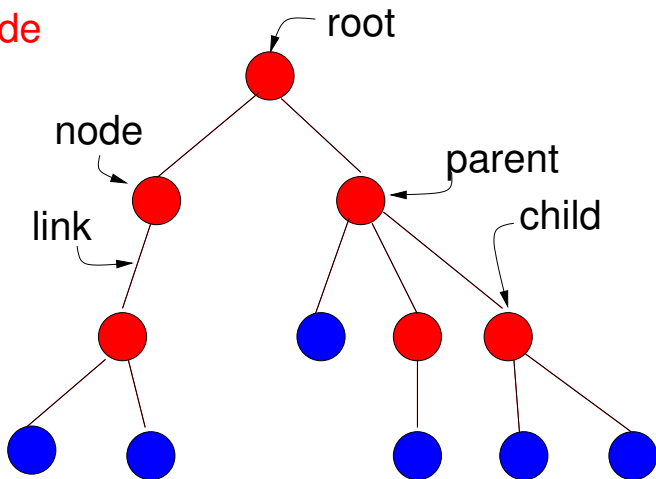




# Tree

internal node

leaf



# Full Binary Tree

