```
Teste 0: 9 8 7 6 5 4 3 2 1 (rot direita)
chave a inserir (-111 para terminar): 9
([9,0](),())
chave a inserir (-111 para terminar): 8
([9,-1]([8,0](),()),())
chave a inserir (-111 para terminar): 7
([8,0]([7,0](),()),([9,0](),()))
chave a inserir (-111 para terminar): 6
([8,-1]([7,-1]([6,0](),()),()),([9,0](),()))
chave a inserir (-111 para terminar): 5
([8,-1]([6,0]([5,0](),()),([7,0](),())),([9,0](),()))
chave a inserir (-111 para terminar): 4
([6,0]([5,-1]([4,0](),()),()),([8,0]([7,0](),()),([9,0](),())))
chave a inserir (-111 para terminar): 3
([6,0] ([4,0] ([3,0] (), ()), ([5,0] (), ())), ([8,0] ([7,0] (), ()), ([9,0] (), ())))
chave a inserir (-111 para terminar): 2
([6,-1],([4,-1],([3,-1],([2,0],()),()),([5,0],()),([8,0],([7,0],(),()),([9,0],(),())
())))
chave a inserir (-111 para terminar): 1
([6,-1],([4,-1],([2,0],([1,0],()),([3,0],())),([5,0],(),())),([8,0],([7,0],(),()),
([9,0](),()))
chave a inserir (-111 para terminar): -111
Teste 1: 1 2 3 4 5 6 7 8 (rot esquerda)
chave a inserir (-111 para terminar): 1
([1,0](),())
chave a inserir (-111 para terminar): 2
([1,1](),([2,0](),()))
chave a inserir (-111 para terminar): 3
([2,0]([1,0](),()),([3,0](),()))
chave a inserir (-111 para terminar): 4
([2,1]([1,0](),()),([3,1](),([4,0](),())))
chave a inserir (-111 para terminar): 5
([2,1]([1,0](),()),([4,0]([3,0](),()),([5,0](),())))
chave a inserir (-111 para terminar): 6
([4,0] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([5,1] (), ([6,0] (), ())))
chave a inserir (-111 para terminar): 7
([4,0] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([6,0] ([5,0] (), ()), ([7,0] (), ())))
chave a inserir (-111 para terminar): 8
([4,1] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([6,1] ([5,0] (), ()), ([7,1] (), ([8,0] (), ()))))
chave a inserir (-111 para terminar): -111
Teste 2: 10 8 9 6 7 (rot esquerda-direita, caso s = 0)
chave a inserir (-111 para terminar): 10
([10,0](),())
chave a inserir (-111 para terminar): 8
([10,-1] ([8,0] (), ()), ())
chave a inserir (-111 para terminar): 9
([9,0] ([8,0] (), ()), ([10,0] (), ()))
chave a inserir (-111 para terminar): 6
([9,-1]([8,-1]([6,0](),()),()),([10,0](),()))
chave a inserir (-111 para terminar): 7
([9,-1]([7,0]([6,0](),()),([8,0](),())),([10,0](),()))
chave a inserir (-111 para terminar): -111
______
Teste 3: 10 20 15 30 25 (rot direita-esquerda, caso s = 0)
chave a inserir (-111 para terminar): 10
([10,0](),())
chave a inserir (-111 para terminar): 20
([10,1] (), ([20,0] (), ()))
chave a inserir (-111 para terminar): 15
([15,0] ([10,0] (), ()), ([20,0] (), ()))
chave a inserir (-111 para terminar): 30
([15,1] ([10,0] (), ()), ([20,1] (), ([30,0] (), ())))
chave a inserir (-111 para terminar): 25
([15,1] ([10,0] (), ()), ([25,0] ([20,0] (), ()), ([30,0] (), ())))
chave a inserir (-111 para terminar): -111
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chave a inserir (-111 para terminar): 7
([7,0](),())
chave a inserir (-111 para terminar): 9
([7,1] (), ([9,0] (), ()))
chave a inserir (-111 para terminar): 5
([7,0]([5,0](),()),([9,0](),()))
chave a inserir (-111 para terminar): 8
([7,1] ([5,0] (), ()), ([9,-1] ([8,0] (), ()), ()))
chave a inserir (-111 para terminar): 10
([7,1] ([5,0] (), ()), ([9,0] ([8,0] (), ()), ([10,0] (), ())))
chave a inserir (-111 para terminar): 6
([7,0] ([5,1] (), ([6,0] (), ())), ([9,0] ([8,0] (), ()), ([10,0] (), ())))
chave a inserir (-111 para terminar): 2
([7,0] ([5,0] ([2,0] (), ()), ([6,0] (), ())), ([9,0] ([8,0] (), ()), ([10,0] (), ())))
chave a inserir (-111 para terminar): 1
([7,-1]([5,-1]([2,-1]([1,0](),()),()),([6,0](),())),([9,0]([8,0](),()),([10,0](),
())))
chave a inserir (-111 para terminar): 4
([7,-1] ([5,-1] ([2,0] ([1,0] (), ()), ([4,0] (), ())), ([6,0] (), ())), ([9,0] ([8,0] (), ()),
([10,0] (), ())))
chave a inserir (-111 para terminar): 3
([7,-1] ([4,0] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([5,1] (), ([6,0] (), ()))), ([9,0] ([8,0]
(), ()), ([10,0] (), ())))
chave a inserir (-111 para terminar): -111
Teste 5: 7 9 5 8 10 6 2 1 3 4 (rot esquerda-direita, caso s = 1)
chave a inserir (-111 para terminar): 7
([7,0](),())
chave a inserir (-111 para terminar): 9
([7,1](),([9,0](),()))
chave a inserir (-111 para terminar): 5
([7,0]([5,0](),()),([9,0](),()))
chave a inserir (-111 para terminar): 8
([7,1]([5,0](),()),([9,-1]([8,0](),()),()))
chave a inserir (-111 para terminar): 10
([7,1] ([5,0] (), ()), ([9,0] ([8,0] (), ()), ([10,0] (), ())))
chave a inserir (-111 para terminar): 6
([7,0] ([5,1] (), ([6,0] (), ())), ([9,0] ([8,0] (), ()), ([10,0] (), ())))
chave a inserir (-111 para terminar): 2
([7,0] ([5,0] ([2,0] (), ()), ([6,0] (), ())), ([9,0] ([8,0] (), ()), ([10,0] (), ())))
chave a inserir (-111 para terminar): 1
([7,-1]\ ([5,-1]\ ([2,-1]\ ([1,0]\ (),\ ()),\ ([6,0]\ (),\ ())),\ ([9,0]\ ([8,0]\ (),\ ()),\ ([10,0]\ (),
())))
chave a inserir (-111 para terminar): 3
([7,-1] ([5,-1] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([6,0] (), ())), ([9,0] ([8,0] (), ()),
([10,0] (), ())))
chave a inserir (-111 para terminar): 4
([7,-1] ([3,0] ([2,-1] ([1,0] (), ()), ()), ([5,0] ([4,0] (), ()), ([6,0] (), ()))), ([9,0] ([8,0]
(), ()), ([10,0] (), ())))
chave a inserir (-111 para terminar): -111
Teste 6: 4 2 6 1 3 5 9 10 8 7 (rot direita-esquerda, caso s = -1)
chave a inserir (-111 para terminar): 4
([4,0](),())
chave a inserir (-111 para terminar): 2
([4,-1]([2,0](),()),())
chave a inserir (-111 para terminar): 6
([4,0] ([2,0] (), ()), ([6,0] (), ()))
chave a inserir (-111 para terminar): 1
([4,-1]([2,-1]([1,0](),()),()),([6,0](),()))
chave a inserir (-111 para terminar): 3
([4,-1] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([6,0] (), ()))
chave a inserir (-111 para terminar): 5
([4,0] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([6,-1] ([5,0] (), ()), ()))
chave a inserir (-111 para terminar): 9
([4,0] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([6,0] ([5,0] (), ()), ([9,0] (), ())))
chave a inserir (-111 para terminar): 10
([4,1] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([6,1] ([5,0] (), ()), ([9,1] (), ([10,0] (),
()))))
```

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chave a inserir (-111 para terminar): 8
([4,1] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([6,1] ([5,0] (), ()), ([9,0] ([8,0] (), ()),
([10,0] (), ())))
chave a inserir (-111 para terminar): 7
([4,1] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([8,0] ([6,0] ([5,0] (), ()), ([7,0] (), ())),
([9,1] (), ([10,0] (), ()))))
chave a inserir (-111 para terminar): -111
Teste 7: 4 2 6 1 3 5 9 10 7 8 (rot direita-esquerda, caso s = 1)
chave a inserir (-111 para terminar): 4
([4,0](),())
chave a inserir (-111 para terminar): 2
([4,-1]([2,0](),()),())
chave a inserir (-111 para terminar): 6
([4,0] ([2,0] (), ()), ([6,0] (), ()))
chave a inserir (-111 para terminar): 1
([4,-1] ([2,-1] ([1,0] (), ()), ()), ([6,0] (), ()))
chave a inserir (-111 para terminar): 3
([4,-1] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([6,0] (), ()))
chave a inserir (-111 para terminar): 5
([4,0] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([6,-1] ([5,0] (), ()), ()))
chave a inserir (-111 para terminar): 9
([4,0]([2,0]([1,0](),()),([3,0](),())),([6,0]([5,0](),()),([9,0](),())))
chave a inserir (-111 para terminar): 10
([4,1] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([6,1] ([5,0] (), ()), ([9,1] (), ([10,0] (),
()))))
chave a inserir (-111 para terminar): 7
([4,1] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([6,1] ([5,0] (), ()), ([9,0] ([7,0] (), ()),
([10,0](),())))
chave a inserir (-111 para terminar): 8
([4,1] ([2,0] ([1,0] (), ()), ([3,0] (), ())), ([7,0] ([6,-1] ([5,0] (), ()), ()), ([9,0] ([8,0] (), ()))
(), ()), ([10,0] (), ()))))
chave a inserir (-111 para terminar): -111
```