

The diagram illustrates a sequence of operations (DRAW, DUP, SWAP) on a stack of numbers. The root node is labeled "ROOT -3 -4 5 -1 2". The tree branches out into several levels, with nodes labeled with sequences of numbers and operations. Blue text indicates the current state of the stack at each node. The diagram illustrates the execution of a program, showing how the stack evolves through various operations.

Root node: ROOT -3 -4 5 -1 2

Level 1 nodes:

- Left branch: -3 4 5 -1 2
- Right branch: -3 -2 -1 -5 4
- Far right branch: 5 -1 2 3 4 15 DUP -3 -2 1 -5 -4

Level 2 nodes (from left to right):

- From -3 4 5 -1 2:
  - 4, -3
  - 2, -3
  - 2, -1
- From -3 -2 -1 -5 4:
  - 5, -4
  - 2, -1
- From 5 -1 2 3 4 15 DUP -3 -2 1 -5 -4:
  - 4, -3
  - 4, -5
  - 2, -1
  - 1, -2

Level 3 nodes (from left to right):

- From 4, -3: 3 4 5 -1 2
- From 2, -3: -3 -2 1 -5 -4
- From 2, -1: -3 4 5 1 2
- From 5, -4: 18 DUP -3 4 5 1 2
- From 2, -1: 21 DUP -3 -2 -1 -5 4

Level 4 nodes (from left to right):

- From 3 4 5 -1 2: 2, -1
- From -3 -2 1 -5 -4: 1, -2
- From -3 4 5 1 2: 4, -3
- From 18 DUP -3 4 5 1 2: 4, -3
- From 21 DUP -3 -2 -1 -5 4: 4, -5

Level 5 nodes (from left to right):

- From 2, -1: 3 DRAW 3 4 5
- From 1, -2: 5 DRAW -3 -2 -1 -5
- From 4, -3: 8 DRAW 3 4 5
- From 4, -3: 20 DRAW -3 -2 -1 -5
- From 4, -5: 23 DRAW 5 12

Level 6 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 7 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 8 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 9 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 10 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 11 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 12 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 13 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 14 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 15 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 16 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 17 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 18 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 19 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 20 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 21 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 22 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 23 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 24 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5
- From 5 DRAW -3 -2 -1 -5: 5 DRAW -3 -2 -1 -5
- From 8 DRAW 3 4 5: 8 DRAW 3 4 5
- From 20 DRAW -3 -2 -1 -5: 20 DRAW -3 -2 -1 -5
- From 23 DRAW 5 12: 23 DRAW 5 12

Level 25 nodes (from left to right):

- From 3 DRAW 3 4 5: 3 DRAW 3 4 5