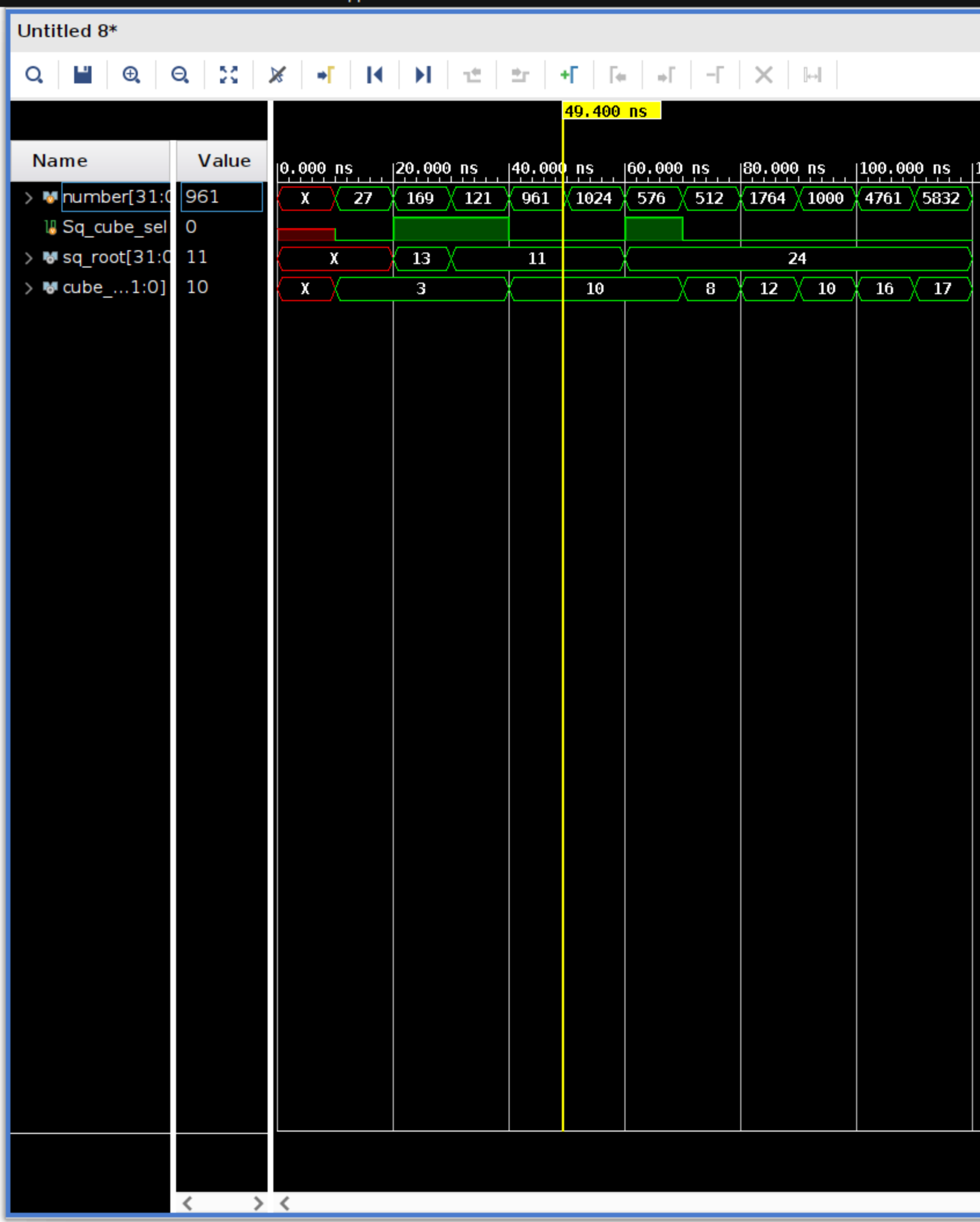
Untitled 8*
49.400 ns
Name
Value
number[31:0]
961
Sq_cube_sel
0
sq_root[31:0]
11
cube_...1:0]
10
0.000 ns
20.000 ns
40.000 ns
60.000 ns
80.000 ns
100.000 ns
X
27
169
121
961
1024
576
512
1764
1000
4761
5832
X
13
11
24
X
3
10
8
12
10
16
17

Square_Cube_root.v

/home/itzzinfinity/Cozy Drive/100daysofRTL/day_085/project_1/project_1.srcs/sources_1/new/Square_Cube_root.

```
1  `timescale 1ns / 1ps
2  //////////////////////////////////////////////////////////////////////////////////
3  // Engineer: Anjan Prasad
4  // Create Date: 12/15/2024 12:13:25 AM
5  // Module Name: Square_Cube_root
6  //////////////////////////////////////////////////////////////////////////////////
7
8  module Square_Cube_root(
9      input [31:0] number,
10     input Sq_cube_sel,       // Selector: 1 for square root, 0 for cube root
11     output reg [31:0] sq_root,
12     output reg [31:0] cube_root
13 );
14
15     always @(number or Sq_cube_sel) begin
16         if (Sq_cube_sel) begin
17             find_sq(number, sq_root);
18             $display("\n \t\t Square Root of %0d is %0d", number, sq_root);
19         end else begin
20             find_cube(number, cube_root);
21             $display("\n \t\t Cube Root of %0d is %0d", number, cube_root);
22         end
23     end
24
25     task find_sq;
26         input [31:0] num;
27         output [31:0] res;
28         begin
29             res = num**(0.5);
30         end
31     endtask
32
33     task find_cube;
34         input [31:0] num;
35         output [31:0] res;
36         begin
37             res = num**(0.33);
38         end
39     endtask
40
41 endmodule
42
```

Square_Cube_root_tb.v

/home/itzzinfinity/Cozy Drive/100daysofRTL/day_085/project_1/project_1.srcs/sim_1/new/Square_Cube_root_tb.v

```
1   `timescale 1ns / 1ps
2   //////////////////////////////////////////////////////////////////////////////////
3   // Engineer: Anjan Prasad
4   // Create Date: 12/15/2024 12:16:02 AM
5   // Module Name: Square_Cube_root_tb
6   //////////////////////////////////////////////////////////////////////////////////
7
8
9   module Square_Cube_root_tb;
10  reg [31:0] number;
11  reg Sq_cube_sel;
12  wire [31:0] sq_root, cube_root;
13
14  Square_Cube_root DUT(number,Sq_cube_sel, sq_root, cube_root);
15
16  initial begin
17      #10 number = 27;   Sq_cube_sel = 0;
18      #10 number = 169;  Sq_cube_sel = 1;
19      #10 number = 121;  Sq_cube_sel = 1;
20      #10 number = 961;  Sq_cube_sel = 0;
21      #10 number = 1024; Sq_cube_sel = 0;
22      #10 number = 576;  Sq_cube_sel = 1;
23      #10 number = 512;  Sq_cube_sel = 0;
24      #10 number = 1764; Sq_cube_sel = 0;
25      #10 number = 1000; Sq_cube_sel = 0;
26      #10 number = 4761; Sq_cube_sel = 0;
27      #10 number = 5832; Sq_cube_sel = 0;
28      #10 $finish;
29  end
30  endmodule
```