

## ❖ Square Root:

Explanation: -

The square root of a non-negative number  $x$  is a value  $y$  such that  $y^2 = x$ . It is denoted as  $\sqrt{x}$  and represents the principal (non-negative) root. Square roots are widely used in mathematics, science, and engineering, often appearing in geometry, algebra, and statistics.

Time Complexity: -  $O(\log(\frac{1}{p}))$

Space Complexity: -  $O(\log(\frac{1}{p}))$

```
[Start]
|
[Input number]
|
[Input precision]
|
[guess = number / 2]
|
[Is |guess * guess - number| < precision?]
|                               |
[Yes]                           [No]
|                               |
[Output
"Square root is
approximately: "
+ guess]
|                               |
[End]  [newGuess = (guess + number / guess) / 2]
|
[sqrtResult = sqrt(number, newGuess, precision)]
|
[End]
```