

SQRT Function

Computes the square root of the input parameter. Input value can be a Decimal or Integer literal or a reference to a column containing numeric values. All generated values are non-negative.

Basic Usage

Numeric literal example:

```
derive type:single value:SQRT(25 )
```

Output: Generates a column containing the square root of 25, which is 5.

Column reference example:

```
derive type:single value:SQRT(MyValue) as: 'sqroot_MyValue'
```

Output: Generates the new `sqroot_myValue` column containing the square root of the values of the `MyValue` column.

Syntax and Arguments


```
derive type:single value:SQRT(numeric_value)
```

Argument	Required?	Data Type	Description
<code>numeric_value</code>	Y	string, decimal, or integer	Name of column or Decimal or Integer literal to apply to the function

For more information on syntax standards, see *Language Documentation Syntax Notes*.

`numeric_value`

Name of the column or numeric literal whose values are used to compute the square root.

 **NOTE:** Negative input values generate null output values.

- Missing input values generate missing results.
- Literal numeric values should not be quoted.
- Multiple columns and wildcards are not supported.

Usage Notes:

Required?	Data Type	Example Value
Yes	String (column reference) or Integer or Decimal literal	25

Examples

 **Tip:** For additional examples, see *Common Tasks*.

Example - Pythagorean Theorem

The following example demonstrates how the `POW` and `SQRT` functions work together to compute the hypotenuse of a right triangle using the Pythagorean theorem.

- `POW` - X^Y . In this case, 10 to the power of the previous one. See *POW Function*.
- `SQRT` - computes the square root of the input value. See *SQRT Function*.

The Pythagorean theorem states that in a right triangle the length of each side (x,y) and of the hypotenuse (z) can be represented as the following:

$$z^2 = x^2 + y^2$$

Therefore, the length of z can be expressed as the following:

$$z = \text{sqrt}(x^2 + y^2)$$

For more information on the Pythagorean theorem, see https://en.wikipedia.org/wiki/Pythagorean_theorem.

Source:

The dataset below contains values for x and y:

X	Y
3	4
4	9
8	10
30	40

Transform:

You can use the following transform to generate values for z^2 .

NOTE: Do not add this step to your recipe right now.

```
derive type:single value:(POW(x,2) + POW(y,2)) as:'Z'
```

You can see how column Z is generated as the sum of squares of the other two columns. Now, wrap the value computation in a `SQRT` function:

```
derive type:single value:SQRT((POW(x,2) + POW(y,2))) as: 'Z'
```

Results:

X	Y	Z
3	4	5
4	9	9.848857801796104

8	10	12.806248474865697
30	40	50