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.

Wrangle vs. SQL: This function is part of Wrangle , a proprietary data transformation language. Wrangle is not SQL. For more information, see *Wrangle Language*.

Basic Usage

Numeric literal example:

```
sqrt(25)
```

Output: Returns the square root of 25, which is 5.

Column reference example:

```
sqrt(MyValue)
```

Output: Returns the square root of the values of the `MyValue` column.

Syntax and Arguments

```
sqrt(numeric_value)
```

Argument	Required?	Data Type	Description
numeric_value	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:

$z = sqrt(x^2 + y^2)$

Source:

The dataset below contains values for x and y:

X	Y
3	4
4	9
8	10
30	40

Transformation:

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

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

Transformation Name	`New formula`
Parameter: Formula type	`Single row formula`
Parameter: Formula	`(POW(x,2) + POW(y,2))`
Parameter: New column name	`'Z'`

You can see how column Z is generated as the sum of squares of the other two columns, which yields z^2.

Now, edit the transformation to wrap the value computation in a `SQRT` function. This step is done to compute the value for *z*, which is the distance between the two points based on the Pythagorean theorem.

Transformation Name	New formula
Parameter: Formula type	Single row formula
Parameter: Formula	SQRT((POW(x,2) + POW(y,2)))
Parameter: New column name	'Z'

Results:

X	Y	Z
3	4	5
4	9	9.848857801796104
8	10	12.806248474865697
30	40	50