

# RADIANS Function

Computes the radians of an input value measuring degrees of an angle. The value can be a Decimal or Integer literal or a reference to a column containing numeric values.

- A unit of 1 **radian** identifies the angle of a circle where the radius of the circle equals the length of the arc on the circle for that angle. This value corresponds to approximately 57.3 degrees.
- Input units are in degrees.
- You can convert from radians to degrees. For more information, see *DEGREES Function*.

## Basic Usage

### Numeric literal example:

```
derive type:single value: ROUND(RADIANS(57.2728),4)
```

**Output:** Generates a column containing the computation in radians of 57.2728 rounded to four digits, which is 1.0000.

### Column reference example:

```
derive type:single value: RADIANS(myDegrees) as: myRads'
```

**Output:** Generates the new `myRads` column containing the conversion of the values in `MyDegrees` column to radians.

## Syntax and Arguments

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

Argument	Required?	Data Type	Description
numeric_value	Y	string, decimal, or integer	Name of column, Decimal or Integer literal, or function returning those types to apply to the function

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

### numeric\_value

Name of the column, Integer or Decimal literal, or function returning that data type to apply to the function.

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

### Usage Notes:

Required?	Data Type	Example Value
Yes	String (column reference) or Integer or Decimal literal	10

## Examples

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

### Example - DEGREES and RADIANS functions

This example illustrates to use the DEGREES and RADIANS functions to convert values from one unit of measure to the other.

- See *DEGREES Function*.
- See *RADIANS Function*.

#### Source:

In this example, the source data contains information about a set of isosceles triangles. Each triangle is listed in a separate row, with the listed value as the size of the non-congruent angle in the triangle in degrees.

You must calculate the measurement of all three angles of each isosceles triangle in radians.

triangle	a01
t01	30
t02	60
t03	90
t04	120
t05	150

#### Transform:

You can convert the value for the non-congruent angle to radians using the following:

```
derive type:single value: ROUND(RADIANS(a01), 4) as: 'r01'
```

Now, calculate the value in degrees of the remaining two angles, which are congruent. Since the sum of all angles in a triangle is 180, the following formula can be applied to compute the size in degrees of each of these angles:

```
derive type:single value: (180 - a01) / 2 as: 'a02'
```

Convert the above to radians:

```
derive type:single value: ROUND(RADIANS(a02), 4) as: 'r02'
```

Create a second column for the other congruent angle:

```
derive type:single value: ROUND(RADIANS(a02), 4) as: 'r03'
```

To check accuracy, you sum all three columns and convert to degrees:

```
derive type:single value: ROUND(DEGREES(r01 + r02 + r03), 4) as: 'checksum'
```

#### Results:

After you drop the intermediate columns, you see the following results and determine the error in the checksum is acceptable:

triangle	a01	r03	r02	r01	checksum
t01	30	1.3095	1.3095	0.5238	179.9967
t02	60	1.0476	1.0476	1.0476	179.9967
t03	90	0.7857	0.7857	1.5714	179.9967
t04	120	0.5238	0.5238	2.0952	179.9967
t05	150	0.2619	0.2619	2.6190	179.9967