

# EXAMPLE - Trigonometry Functions

This example illustrates how to apply basic trigonometric functions to your transformations. All of the functions take inputs in radians.

- **Sine.** See *SIN Function*.
- **Cosine.** See *COS Function*.
- **Tangent.** See *TAN Function*.
- **Cotangent.** Computed as  $1/\text{TAN}$ .
- **Secant.** Computed as  $1/\text{COS}$ .
- **Cosecant.** Computed as  $1/\text{SIN}$ .

## Source:

In the following sample, input values are in degrees:

X
-30
0
30
45
60
90
120
135
180

## Transformation:

In this example, all values are rounded to three decimals for clarity.

First, the above values in degrees must be converted to radians.

<b>Transformation Name</b>	New formula
<b>Parameter: Formula type</b>	Single row formula
<b>Parameter: Formula</b>	<code>round(radians(X), 3)</code>
<b>Parameter: New column name</b>	'rX'

Sine:

<b>Transformation Name</b>	New formula
<b>Parameter: Formula type</b>	Single row formula
<b>Parameter: Formula</b>	<code>round(sin(rX), 3)</code>

<b>Parameter: New column name</b>	'SINrX'
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Cosine:

<b>Transformation Name</b>	New formula
<b>Parameter: Formula type</b>	Single row formula
<b>Parameter: Formula</b>	$\text{round}(\cos(rX), 3)$
<b>Parameter: New column name</b>	'COSrX'

Tangent:

<b>Transformation Name</b>	New formula
<b>Parameter: Formula type</b>	Single row formula
<b>Parameter: Formula</b>	$\text{round}(\tan(rX), 3)$
<b>Parameter: New column name</b>	'TANrX'

Cotangent:

<b>Transformation Name</b>	New formula
<b>Parameter: Formula type</b>	Single row formula
<b>Parameter: Formula</b>	$\text{round}(1 / \tan(rX), 3)$
<b>Parameter: New column name</b>	'COTrX'

Secant:

<b>Transformation Name</b>	New formula
<b>Parameter: Formula type</b>	Single row formula
<b>Parameter: Formula</b>	$\text{round}(1 / \cos(rX), 3)$
<b>Parameter: New column name</b>	'SECrX'

Cosecant:

<b>Transformation Name</b>	New formula
<b>Parameter: Formula type</b>	Single row formula
<b>Parameter: Formula</b>	$\text{round}(1 / \sin(rX), 3)$
<b>Parameter: New column name</b>	'CSCrX'

**Results:**

X	rX	COTrX	SECrX	CSCrX	TANrX	COSrX	SINrX
-30	-0.524	-1.73	1.155	-1.999	-0.578	0.866	-0.5
0	0	<i>null</i>	1	<i>null</i>	0	1	0
30	0.524	1.73	1.155	1.999	0.578	0.866	0.5
45	0.785	1.001	1.414	1.415	0.999	0.707	0.707
60	1.047	0.578	1.999	1.155	1.731	0.5	0.866
90	1.571	0	-4909.826	1	-4909.826	0	1
120	2.094	-0.577	-2.001	1.154	-1.734	-0.5	0.866
135	2.356	-1	-1.414	1.414	-1	-0.707	0.707
180	3.142	2454.913	-1	-2454.913	0	-1	0