

# EXAMPLE - Exponential Functions

The following example demonstrates how the exponential functions work together. These functions include the following:

- EXP -  $e^X$ . See *EXP Function*.
- LN - natural logarithm of the above. See *LN Function*.
- LOG -  $10^X$ . See *LOG Function*.
- POW -  $X^Y$ . The value X raised to the power Y. See *POW Function*.

## Source:

rowNum	X
1	-2
2	1
3	0
4	1
5	2
6	3
7	4
8	5

## Transform:

```
derive type:single value: EXP (X) as: 'expX'
```

```
derive type:single value: LN (expX) as: 'ln_expX'
```

```
derive type:single value: LOG (X) as: 'logX'
```

```
derive type:single value: POW (10,logX) as: 'pow_logX'
```

## Results:

In the following, (null value) indicates that a null value is generated for the computation.

rowNum	X	expX	ln_expX	logX	pow_logX
1	-2	0.1353352832366127	-2	(null value)	(null value)
2	-1	0.1353352832366127	-0.9999999999999998	(null value)	(null value)
3	0	1	0	(null value)	0
4	1	2.718281828459045	1	0	1
5	2	7.3890560989306495	2	0.30102999566398114	1.9999999999999998
6	3	20.085536923187668	3	0.47712125471966244	3
7	4	54.59815003314423	4	0.6020599913279623	3.9999999999999999

8	5	148.41315910257657	5	0.6989700043360187	4.999999999999999
---	---	--------------------	---	--------------------	-------------------