EXAMPLE - POW and SQRT Functions

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:

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

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