

Thresh3

A simple threshold function where the threshold is a linear function defined by the “c”, “d” and “e” parameters. Instead of a single constant threshold, the threshold has the form:

$$\text{Threshold} = c d + e$$

If you specify numbers for all the parameters, you probably do not need this linear function. In such cases you can just replace the more complex threshold by a simple constant threshold, and use the Thresh1 function instead.

However, if some of the parameters are references to nodes, the Thresh3 function provides a little bit more flexibility.

If the input value is greater than or equal to the threshold, the output value is equal to the “a” parameter. Otherwise, the output value is equal to the “b” parameter.

Like the Thresh1 function, this function is also useful for converting a variable to e.g., an indicator. By letting “a” be 1 and “b” be 0, the output value is the indicator for the event that the input value is greater than or equal to the threshold.

Note that the “a” parameter does not need to be greater than the “b” parameter. It is perfectly OK to e.g., let “a” be 0 and “b” be 1.

Default parameter values:

$$a = 1, b = 0, c = 0, d = 0, e = 1$$

Example:

$$a = 10, b = 1, c = 2, d = 3, e = 1$$

$$\text{Input} = 5 \Rightarrow \text{Output} = 1$$

$$\text{Input} = 9 \Rightarrow \text{Output} = 10$$