Gates arithmetic

From Wiremod Wiki

Contents

Absolute

Inputs:	N A
Outputs:	N Out
Description:	Returns the absolute value of A

Add

Inputs:	N A B C D E F G H
Outputs:	N Out
Description:	Adds the inputs together. Any amount of inputs can be used.

And / Add

Inputs:	N A B
Outputs:	N Out
Description:	Outputs 0 if either input is negative or zero. Otherwise, outputs A + B.

Average

Inputs:	N A B C D E F G H
Outputs:	N Out
Description:	Outputs the sum of the inputs divided by the number of inputs

Ceiling (Round up)

Inputs:	N A
Outputs:	N Out
Description:	Outputs A rounded up to the nearest whole number

Clamp

Inputs:	N A Min Max
Outputs:	N Out
Description:	Clamps A between Min and Max

Delta

Inputs:	N A
Outputs:	N Out
Description:	Outputs the current value of A minus the previous value of A. This is updated whenever the value of A changes.

Delta (Rectified)

Inputs:	N A
Outputs:	N Out
Description:	Outputs the current value of A minus the value of A at the previous tick. Modulo is applied to the output to prevent it from giving values outside the -180 to 180 range

Divide

Inputs:	N A B
Outputs:	N Out
Description:	Divides A by B

Exp

Inputs:	N A
Outputs:	N Out
Description:	Outputs [the number e](https://en.wikipedia.org/wiki/E_%28mathematical_constant%29) to the power of A

Exponential Powers

Inputs:	N A B
Outputs:	N Out

Description:	Outputs A to the power of B

Floor (Round down)

Inputs:	N A
Outputs:	N Out
Description:	Outputs A rounded down to the nearest whole number

Identity (No change)

Inputs:	N A
Outputs:	N Out
Description:	Outputs A. Useful for organizing your wiring

Increment

Inputs:	N A Clk Reset
Outputs:	N Out
Description:	Stores a number in memory, and always outputs that number. On the rising edge of Clk, A is added to the stored number. On the rising edge of Reset, the stored number is reset to 0.

Increment/Decrement

Inputs:	N A Increment Decrement Reset
Outputs:	N Out
Description:	Like Increment, but Clk is renamed to Increment, and Decrement is added. On the rising edge of Decrement, A is subtracted from the stored number.

Inverse

Inputs:	N A
Outputs:	N Out
Description:	Outputs 1 divided by A

Log

Inputs:	N A
Outputs:	N Out
Description:	Outputs [the logarithm to the base e](https://en.wikipedia.org/wiki/Natural_logarithm) of A

Log 10

Inputs:	N A
Outputs:	N Out
Description:	Outputs the logarithm to the base 10 of A

Modulo

Inputs:	N A B
Outputs:	N Out
Description:	Outputs the remainder of A divided by B. Note: this can be negative if A is negative.

Multiply

Inputs:	N A B C D E F G H
Outputs:	N Out
Description:	Multiplies all its inputs. You don't need to wire all the inputs if you don't need them.

Negate

Inputs:	N A
Outputs:	N Out
Description:	Outputs A negated. (For example, 5 negated is -5. -2 negated is 2.

Pi

Inputs:	None
Outputs:	N Out
Description:	Outputs Pi (3.14159...)

Percent

Inputs:	N Value Max
Outputs:	N Out
Description:	Outputs what percentage Value is of Max. For example, 20 is 50% of 40, so this would output 50 if Value was 20 and Max was 40.

Random

Inputs:	N A B
Outputs:	N Out
Description:	Outputs a random number between A and B every tick

Round

Inputs:	N A
Outputs:	N Out
Description:	Outputs A rounded to the nearest whole number

Sign

Inputs:	N A
Outputs:	N Out
Description:	Outputs -1 when A is less than 0 Outputs 0 when A is equal to 0 Outputs 1 when A is greater than 0

Square Root

Inputs:	N A
Outputs:	N Out
Description:	Outputs the [square root](https://en.wikipedia.org/wiki/Square_root) of A

Subtract

Inputs:	N A B
Outputs:	N Out
Description:	Outputs the B subtracted from A