“On Click” Functions

Function	Description	Example(s)
AND(logicalValue1, logicalValue2, ...logicalValueN)	The AND function returns TRUE if all arguments are TRUE. If any element is FALSE, this function returns the FALSE value. The logicalValue arguments are conditions to be checked. All conditions can be either TRUE or FALSE.	View SketchUp Example
FALSE()	The False function sets the logical value to FALSE. The FALSE function does not require any arguments.	View SketchUp Example
IF(test, thenValue, elseValue)	The IF function identifies a logical test. The test argument is any value or expression that can be TRUE or FALSE. The thenValue (optional) is the value that is returned if the logical test is TRUE. The elseValue (optional) is the value that is returned if the logical test is FALSE.	**Example:** =IF (5=5, 1, 0) Returns a 1 if the test (5=5) is TRUE. Otherwise, the function returns a 0. View SketchUp Example
NOT(logicalValue)	The NOT function reverses the logicalValue. The logicalValue argument is any value to be reversed.	View SketchUp Example
OR(logicalValue1, logicalValue2, ...logicalValueN)	The OR function returns TRUE if at least one argument is TRUE. This function returns FALSE if all the arguments have the logical value FALSE.The logicalValue arguments are conditions to be checked. All conditions can be either TRUE or FALSE.	--
TRUE()	The TRUE function turns the logical value to TRUE. The TRUE() function does not require any arguments.	View SketchUp Example

Logical Functions

Function	Description	Example(s)
AND(logicalValue1, logicalValue2, ...logicalValueN)	The AND function returns TRUE if all arguments are TRUE. If any element is FALSE, this function returns the FALSE value. The logicalValue arguments are conditions to be checked. All conditions can be either TRUE or FALSE.	View SketchUp Example
FALSE()	The False function sets the logical value to FALSE. The FALSE function does not require any arguments.	View SketchUp Example
IF(test, thenValue, elseValue)	The IF function identifies a logical test. The test argument is any value or expression that can be TRUE or FALSE. The thenValue (optional) is the value that is returned if the logical test is TRUE. The elseValue (optional) is the value that is returned if the logical test is FALSE.	**Example:** =IF (5=5, 1, 0) Returns a 1 if the test (5=5) is TRUE. Otherwise, the function returns a 0. View SketchUp Example
NOT(logicalValue)	The NOT function reverses the logicalValue. The logicalValue argument is any value to be reversed.	View SketchUp Example
OR(logicalValue1, logicalValue2, ...logicalValueN)	The OR function returns TRUE if at least one argument is TRUE. This function returns FALSE if all the arguments have the logical value FALSE.The logicalValue arguments are conditions to be checked. All conditions can be either TRUE or FALSE.	--
TRUE()	The TRUE function turns the logical value to TRUE. The TRUE() function does not require any arguments.	View SketchUp Example

Trig Functions

Function	Description	Example(s)
ACOS(number)	The ACOS function returns the inverse cosine of the number in degrees.	View SketchUp Example
ACOSH(number)	The ACOSH function returns the inverse hyperbolic cosine of the number in degrees.	View SketchUp Example
ASIN(number)	The ASIN function returns the inverse sine of the number in degrees.	View SketchUp Example
ASINH(number)	The ASINH function returns the inverse hyperbolic sine of the number in degrees.	View SketchUp Example
ATAN(number)	The ATAN function returns the inverse tangent of the number in degrees.	View SketchUp Example
ATANH(number)	The ATANH function returns the inverse hyperbolic tangent of the number in degrees.	View SketchUp Example
COS(number)	The COS function returns the cosine of the number in degrees.	View SketchUp Example
COSH(number)	The COSH function returns the hyperbolic cosine of the number in degrees.	View SketchUp Example
SIN(number)	The SIN function returns the sine of the number in radians.	View SketchUp Example
SINH(number)	The SINH function returns the hyperbolic sine of the number in radians.	View SketchUp Example
TAN(number)	The TAN function returns the tangent of the number in radians.	View SketchUp Example
TANH(number)	The TANH function returns the hyperbolic tangent of the number in radians.	View SketchUp Example

Text Functions

Function	Description	Example(s)
CHAR(number)	The CHAR function converts a number into a character according to the current code table. The number argument can be a two-digit or three-digit integer number between 1 and 255 (representing the code value for the character).	View SketchUp Example
CODE(text)	The CODE function returns a numeric code for the first character in a text string. The text argument is the text for which the code of the first character is to be found.	View SketchUp Example
CONCATENATE(text1, text2, ...textN)	The CONCATENATE function combines several text strings into one string. The text1, text2, ...textN arguments are text strings that are combined into one string.	View SketchUp Example
DOLLAR(value, decimals)	The DOLLAR function converts a number to an amount in the currency format, rounded to a specified decimal place. The value argument is the number to be converted to currency. The value argument can be a number, a reference to a cell containing a number, or a formula which returns a number. The decimals (optional) argument is the number of decimal places. If no decimals value is specified, all numbers in currency format will be displayed with two decimal places. The currency format is set in the system settings.	View SketchUp Example
EXACT(text1, text2)	The EXACT function compares two text strings and returns TRUE if they are identical. This function is case-sensitive. The text 1 and text 2 arguments are the text strings.	View SketchUp Example
FIND(findText, text, position)	The FIND function looks for a string of text within another string. The findText argument is the text to be found. The text argument is the text string to be searched. The position (optional) argument is the position in text where the search starts. The findText argument can be a number or any string of characters.	View SketchUp Example

	The search is case-sensitive.	
LEFT(text, number)	The LEFT function returns the first character (or characters) in a text string. The text argument is the text string. The number (optional) argument is the number of characters to be returned. One character is returned if the number is not defined.	--
LEN(text)	The LEN function returns the length of a text string including spaces. The text argument is the string whose length is returned.	--
LOWER(text)	The LOWER function converts all uppercase letters in a text string to lowercase. The text argument is the string to be converted.	View SketchUp Example
MID(text, start, number)	The MID function returns a text segment of a text string. The text argument is the text string. The start argument contains the position of the first character in the text to extract. The number argument is the number of characters to return.	View SketchUp Example
PROPER(text)	The PROPER function capitalizes the first letter in all words of the provided text string.	View SketchUp Example
REPLACE(text, position, length, new)	The REPLACE function replaces part of a text string with a different text string. The text argument is the text string of which part will be replaced. The position function is the position within the text where the replacement will begin. The length argument is the number of characters in the text to be replaced. The new argument is the replacement text. This function can be used to replace both characters and numbers (which are automatically converted to text). The result of the function is always displayed as text. To perform further calculations with a number which has been replaced by text, convert it back to a number using the VALUE function. Any text containing numbers must be enclosed in quotation marks so it is not interpreted as	View SketchUp Example

	a number and automatically converted to text.	
REPT(text, number)	The REPT function repeats a text string. The text argument is the text to be repeated. The number argument is the number of repetitions. The result can be a maximum of 255 characters.	View SketchUp Example
RIGHT(text, number)	The RIGHT function returns the last character or characters in a text string. The text argument is the text string. The number (optional) argument is the number of characters to be returned.	View SketchUp Example
SUBSTITUTE(text, searchText, newText, occurrence)	The SUBSTITUTE function substitutes new text for old text in a string. The text is the old text string. The searchText argument is the segment in text to be replaced. The newText argument is the replacement text. The occurrence (optional)argument indicates the number of occurrences of searchText to be replaced. If the occurrence is missing, the search text is replaced throughout.	View SketchUp Example
TRIM(text)	The TRIM function removes spaces in front of a text string (or aligns cell contents to the left). The argument contains text string or cell whose contents will be left-aligned.	View SketchUp Example
UPPER(text)	The UPPER function converts a text string to uppercase. The text argument contains the lower case letters you want to convert to upper case.	View SketchUp Example
VALUE(text)	The VALUE function converts a text string into a number. The text argument is the text to be converted to a number.	View SketchUp Example

Sketchup Functions

Function	Description	Example(s)
CHOOSE(index,value1,value2, ...valueN)	The CHOOSE function returns a value from a list of parameters, at the location of the index value. This function allows you to create a single drop-down list that drives multiple attribute changes at once. Use CHOOSE and OPTIONINDEX together as a mechanism to assign different values depending on a user's choice in the Component Options dialog box. For example, if the Component Options dialog box allows the user to choose different materials to assign to a component (and the price changes depending on material chosen), you can create a formula for the MSRP	**Example:** =CHOOSE(2,"Blue","Red","Green") Results in "Red." **Example:** =CHOOSE (OPTIONINDEX("Material"), 100, 150, 200) Returns 100, 150, or 200 depending on the material chosen in the Component Options dialog box. View SketchUp Example
CURRENT("attributeName")	The CURRENT function accepts a string name of an attribute, and returns the size or position attribute that the SketchUp user just applied. This function allows you to do validation of Scale Tool or Move Tool	**Example:** =ROUND(CURRENT("LenX")/2)*2 When entered into the LenX value field this example constrains the component to the nearest width, within 2 inches, after scaling.

	actions.	
		View SketchUp Example
EDGES()	The EDGES function returns the number of "ungrouped" edges inside the component or group that this function is called within.	View SketchUp Example
FACEAREA("materialName")	The FACEAREA method returns the area (in square inches) of every "ungrouped" face that is painted with the materialName. The FACEAREA method returns the total area of all ungrouped faces when the materialName is not provided.	**Example:** =FACEAREA("Oak") Returns the square inches of Oak material inside the component or group. View SketchUp Example
FACES()	The FACES function returns the number of "ungrouped" faces inside the component or group that this function is called within.	View SketchUp Example
LARGEST(value1,value2,...valueN)	The LARGEST function returns the largest of the values in a list.	**Example:** =LARGEST(CURRENT("LenX"), 20, 10) When entered into the LenX value field this example constrains the component so it cannot be scaled more than the largest of three numbers (either the value of LenX, 20, or 10):

		View SketchUp Example
LAT()	The LAT function returns the latitude of the current SketchUp model.	View SketchUp Example
LNG()	The LNG function returns the longitude of the current SketchUp model.	--
NEAREST(originalValue, value1, value2, ...valueN)	The NEAREST function compares the originalValue with a list of target values, and returns the target value that is closest to the originalValue.	**Example:** = NEAREST(CURRENT("LenX"),24,36,48) When entered into the LenX value field, this example will cause the component to snap to the nearest width of 24,36, or 48 after scaling. View SketchUp Example
OPTIONINDEX("attributeName")	The OPTIONINDEX function returns the currently selected index from its option list given a string name of an attribute. For example, if an attribute can be "red","blue", or "green", and blue is the current value, this function returns 2. If no match is found, 0 is returned.	View SketchUp Example
OPTIONLABEL("attributeName")	The OPTIONLABEL function returns the	View SketchUp Example

	currently selected label form its option list given a string name of an attribute. For example, if an attribute can be "Red=red","Blue=blue", or "Green=green", and blue is the current value, this function returns "Blue". If no match is found, an error is raised.	**Example:** =SMALLEST(CURRENT("LenX"),20, 10) When entered into the LenX value field this example constrains the component so it cannot be scaled less than the smallest number (the value of LenX, 20, or 10).
SMALLEST(value1,value2,...valueN)	The SMALLEST function returns the smallest of the values in a list.	View SketchUp Example
SUNANGLE()	The SUNANGLE function returns the angle (in degrees) between the sun and the current model's North direction.	View SketchUp Example
SUNELEVATION()	The SUNELEVATION function returns the elevation (in degrees) of the sun from the current model's shadow settings. The elevation is defined as the angle between a vector pointing at the sun and the	View SketchUp Example

ground plane.

Math Functions

Function	Description	Example(s)
ABS(number)	The ABS function returns the absolute value of number.	View SketchUp Example
CEILING(number, significance)	The CEILING function rounds number to the nearest integer or multiple of significance. The significance argument is the value to whose multiple of ten the value is to be rounded up (.01, .1, 1, 10, etc.).	View SketchUp Example
DEGREES(number)	The DEGREES function converts the number (in radians) to degrees.	View SketchUp Example
EVEN(number)	The EVEN function rounds the number up to the nearest even integer.	View SketchUp Example
EXP(number)	The EXP function returns e raised to the power of number.	View SketchUp Example
FLOOR(number, significance)	The FLOOR function rounds the number down to the nearest multiple of significance. The significanceargument is the value to whose multiple of ten the number is to be rounded down (.01, .1, 1, 10, etc.).	View SketchUp Example
INT(number)	The INT function rounds the number down to the nearest integer.	View SketchUp Example
ISEVEN(number)	The ISEVEN function returns TRUE if the number is an even integer, or FALSE if the number is odd. If the number is not an integer, the function evaluates only the integer part of the number.	View SketchUp Example
ISODD(number)	The ISODD function returns TRUE if the number is an odd integer, or FALSE if the number is even. If value is not an number, the function evaluates only the integer part of the number.	View SketchUp Example
LN(number)	The LN function returns the natural logarithm based on the constant e of the number.	--
LOG10(number)	The LOG10 function returns the base-10 logarithm of	View SketchUp Example

	the number.	
ODD(number)	The ODD function rounds the number up to the nearest odd integer.	View SketchUp Example
PI()	The PI function returns the value of PI to fourteen decimal places.	--
RADIANS(number)	The RADIANS function converts the number (in degrees) to radians.	View SketchUp Example
RAND()	The RAND function returns a random number between 0 and 1.	View SketchUp Example **Example:** =RANDBETWEEN(1,3) Returns a 1, 2, 3.
RANDBETWEEN(bottom, top)	The RANDBETWEEN function returns a whole number between the bottom and top number.	View SketchUp Example **Example:** =ROUND(1.12789,2) Returns 1.13.
ROUND(number, count)	The ROUND function rounds the number to a certain number of decimal places according to valid mathematical criteria. The count argument is optional and represents the number of the places to round the number. If the count argument is negative, only the whole number portion is rounded.	View SketchUp Example
SIGN(number)	The SIGN function returns the sign of the number. The function returns the result 1 for a positive sign, -1 for a negative sign, and 0 for zero.	View SketchUp Example
SQRT(number)	The SQRT function returns the positive square root of the number. The value of the number must be positive.	--