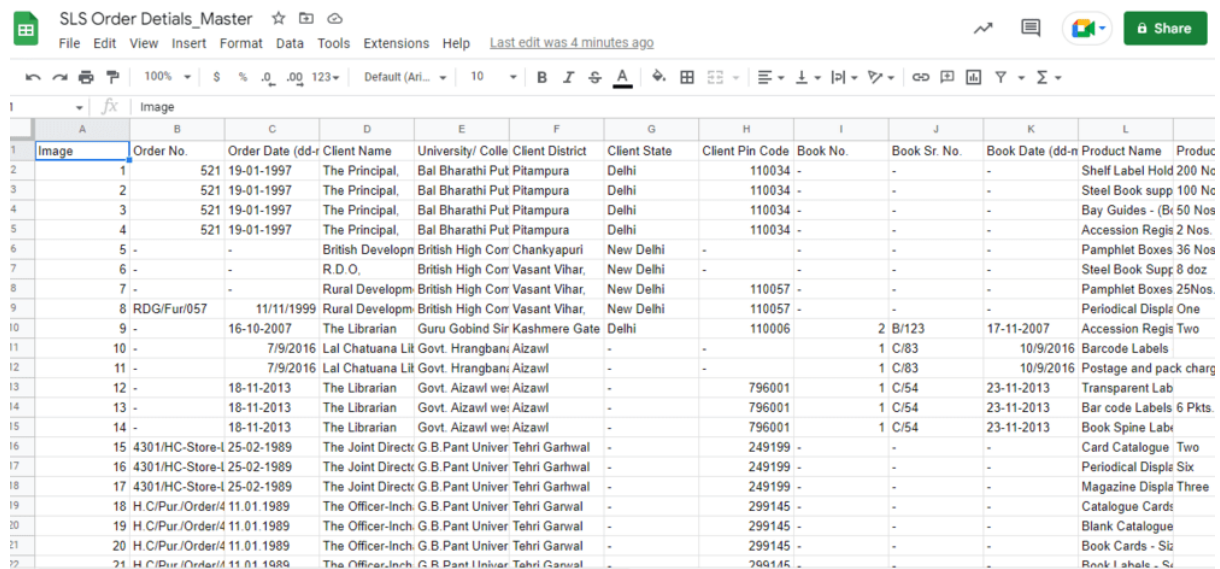


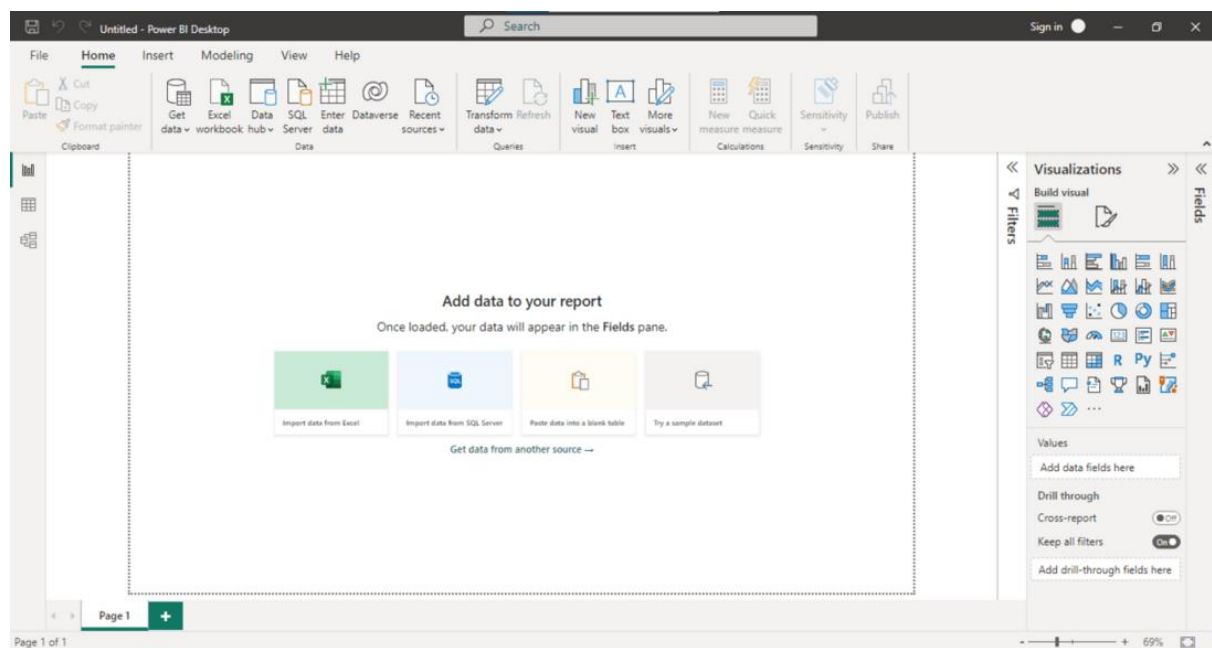
DAX Math Functions

Let's practice some of the commonly used DAX Math Functions on a [sample dataset](#) of library supplies companies. The screenshot of the dataset is given below:



Order No.	Order Date (dd-mm-yy)	Client Name	University/ College	Client District	Client State	Client Pin Code	Book No.	Book Sr. No.	Book Date (dd-mm-yy)	Product Name	Product Description
1	19-01-1997	The Principal,	Bal Bharathi Put Pitampura	Delhi	110034	-	-	-	-	Shelf Label Hold 200 Nos	
2	19-01-1997	The Principal,	Bal Bharathi Put Pitampura	Delhi	110034	-	-	-	-	Steel Book supp 100 Nos	
3	19-01-1997	The Principal,	Bal Bharathi Put Pitampura	Delhi	110034	-	-	-	-	Bay Guides - (B) 50 Nos	
4	19-01-1997	The Principal,	Bal Bharathi Put Pitampura	Delhi	110034	-	-	-	-	Accession Regis 2 Nos.	
5	-	British Developm	British High Com Chankyapuri	New Delhi	-	-	-	-	-	Pamphlet Boxes 36 Nos	
6	-	R.D.O.	British High Com Vasant Vihar,	New Delhi	-	-	-	-	-	Steel Book Supp 8 doz	
7	-	Rural Developm	British High Com Vasant Vihar,	New Delhi	110057	-	-	-	-	Pamphlet Boxes 25Nos.	
8	RDGFur/057	11/11/1999	Rural Developm	British High Com Vasant Vihar,	New Delhi	110057	-	-	-	Periodical Disple One	
9	-	16-10-2007	The Librarian	Guru Gobind Sir Kashmere Gate	Delhi	110006	2	B/123	17-11-2007	Accession Regis Two	
10	-	7/9/2016	Lal Chatuana Lit Govt. Hrangbani Aizawl	-	-	-	1	C/83	10/9/2016	Barcode Labels	
11	-	7/9/2016	Lal Chatuana Lit Govt. Hrangbani Aizawl	-	-	-	1	C/83	10/9/2016	Postage and pack charg	
12	-	18-11-2013	The Librarian	Govt. Aizawl wer Aizawl	-	796001	1	C/54	23-11-2013	Transparent Lab	
13	-	18-11-2013	The Librarian	Govt. Aizawl wer Aizawl	-	796001	1	C/54	23-11-2013	Bar code Labels 6 Pkts.	
14	-	18-11-2013	The Librarian	Govt. Aizawl wer Aizawl	-	796001	1	C/54	23-11-2013	Book Spine Lab	
15	15 4301/HC-Store-I 25-02-1989	The Joint Direct	G.B. Pant Univer Tehri Garhwal	-	249199	-	-	-	-	Card Catalogue Two	
16	4301/HC-Store-I 25-02-1989	The Joint Direct	G.B. Pant Univer Tehri Garhwal	-	249199	-	-	-	-	Periodical Disple Six	
17	17 4301/HC-Store-I 25-02-1989	The Joint Direct	G.B. Pant Univer Tehri Garhwal	-	249199	-	-	-	-	Magazine Disple Three	
18	H.C/Pur./Order/4 11.01.1989	The Officer-Inch	G.B. Pant Univer Tehri Garwal	-	299145	-	-	-	-	Catalogue Cards	
19	H.C/Pur./Order/4 11.01.1989	The Officer-Inch	G.B. Pant Univer Tehri Garwal	-	299145	-	-	-	-	Blank Catalogue	
20	H.C/Pur./Order/4 11.01.1989	The Officer-Inch	G.B. Pant Univer Tehri Garwal	-	299145	-	-	-	-	Book Cards - Siz	
21	H.C/Pur./Order/4 11.01.1989	The Officer-Inch	G.B. Pant Univer Tehri Garwal	-	299145	-	-	-	-	Book 1 shale - Si	

Now, go to the Power BI desktop to load the dataset from excel.



Power BI Desktop

In the image given below, the dataset is uploaded in Power BI.

SLS Order Detials_Master.csv

File Origin: 1252: Western European (Windows) | Delimiter: Comma | Data Type Detection: Based on first 200 rows

Image	Order No.	Order Date (dd-mm-yyyy)	Client Name	University/ College Name	Client
1	521	19-01-1997	The Principal,	Bal Bharathi Public School,	Pit
2	521	19-01-1997	The Principal,	Bal Bharathi Public School,	Pit
3	521	19-01-1997	The Principal,	Bal Bharathi Public School,	Pit
4	521	19-01-1997	The Principal,	Bal Bharathi Public School,	Pit
5	-	-	British Development Corporation office,	British High Commission,	Ch
6	-	-	R.D.O,	British High Commission,	Va
7	-	-	Rural Development office,	British High Commission,	Va
8	RDG/Fur/057	11/11/1999	Rural Development Group,	British High Commission,	Va
9	-	16-10-2007	The Librarian	Guru Gobind Singh Indraprasatha University	Ka
10	-	7/9/2016	Lal Chatuana Librarian	Govt. Hrangbana College	Aiz
11	-	7/9/2016	Lal Chatuana Librarian	Govt. Hrangbana College	Aiz
12	-	18-11-2013	The Librarian	Govt. Aizawl west college	Aiz
13	-	18-11-2013	The Librarian	Govt. Aizawl west college	Aiz
14	-	18-11-2013	The Librarian	Govt. Aizawl west college	Aiz
15	4301/HC-Store-Lab	25-02-1989	The Joint Director(R&E)	G.B.Pant University of Agriculture & Technology,	Tel
16	4301/HC-Store-Lab	25-02-1989	The Joint Director(R&E)	G.B.Pant University of Agriculture & Technology,	Tel
17	4301/HC-Store-Lab	25-02-1989	The Joint Director(R&E)	G.B.Pant University of Agriculture & Technology,	Tel
18	H.C/Pur./Order/417010	11.01.1989	The Officer-Incharge, Stores,	G.B.Pant University of Agriculture & Technology,	Tel
19	H.C/Pur./Order/417010	11.01.1989	The Officer-Incharge, Stores,	G.B.Pant University of Agriculture & Technology,	Tel
20	H.C/Pur./Order/417010	11.01.1989	The Officer-Incharge, Stores,	G.B.Pant University of Agriculture & Technology,	Tel

Extract Table Using Examples | Load | Transform Data | Cancel

Load the dataset

Let's now understand the important DAX math functions in detail:

DAX ABS Math Function

This function returns a number's absolute value. Whether whole or decimal, a decimal number without its sign represents a number's absolute value. When nested in functions that demand a positive integer, you can use the ABS function to make the guarantee that only non-negative numbers are returned from expressions.

Syntax: ABS(<number>)

- number:** The number you wish to round, or a mention of a column of numbers.

Calculating the difference between the Sum of the Tax amount (INR) and the Sum of the Total amount (INR).

Back to report

Sum of Tax amount (INR)	Sum of Total amount (INR)
572,369.55	6,943,454.36

Example: ABS = ABS(572369.5499999996 – 6943454.36)

The screenshot shows the Power BI Desktop interface. The 'Measure tools' ribbon is active. The formula bar contains the formula: `1 ABS = ABS(572369.5499999996 - 6943454.36)`. Below the formula bar, a table is displayed with the following data:

Sum of Tax amount (INR)	Sum of Total amount (INR)	ABS
572,369.55	6,943,454.36	6,371,084.81

DAX Ceiling Math Function

This function increases a number by rounding it up to the nearest integer or significant multiple. The two CEILING functions in DAX differ in the following ways:

The Excel CEILING function mimics the behavior of the Excel CEILING function. When determining the ceiling value, the ISO.CEILING function behaves as specified by ISO.

Syntax: *CEILING(<number>, <significance>)*

- **number:** The number you wish to round, or a mention of a column of numbers.
- **significance:** The significant multiple that you want to round. For instance, enter 1 to round to the nearest integer.

Example: ceiling = CEILING(572369.5499999996, 0.01)

The screenshot shows the Power BI Desktop interface. The 'Measure tools' ribbon is active. The formula bar contains the formula: `1 ceiling = CEILING(572369.5499999996, 0.01)`. Below the formula bar, a table is displayed with the following data:

Sum of Tax amount (INR)	Sum of Total amount (INR)	ceiling
572,369.55	6,943,454.36	572,369.55

DAX Convert Math Function

The convert function performs the transformation of a data type-specific expression.

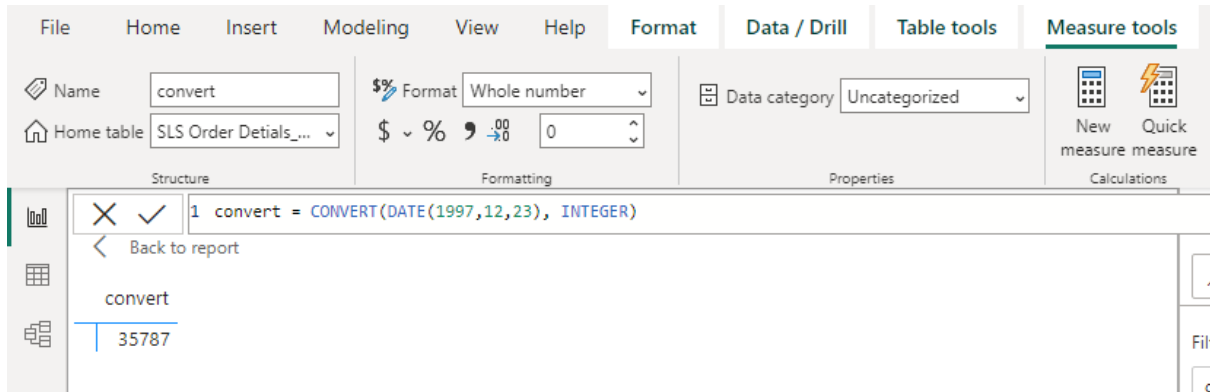
Syntax: *CONVERT(<Expression>, <Datatype>)*

- **Expression:** Any valid expression

- **Datatype:** A list that comprises the following types of data: INTEGER (Whole Number), DOUBLE (Decimal Number), STRING (Text), BOOLEAN (True/False), CURRENCY (Fixed Decimal Number), and DATETIME (Date, Time, etc.)

Converting a Date datatype to Integer,

Example: convert = CONVERT(DATE(1997,12,23), INTEGER)



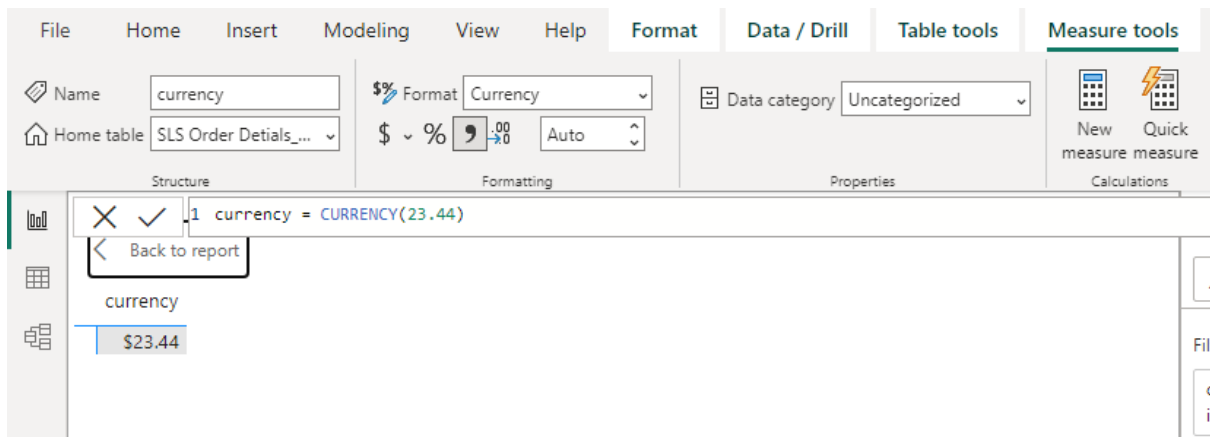
DAX Currency Math Function

The currency function returns the result as a currency data type after evaluating the argument.

Syntax: CURRENCY(<value>)

- **value:** Any DAX expression that only produces a single scalar value and must be evaluated exactly once before any subsequent operations.

Example: currency = CURRENCY(23.44)



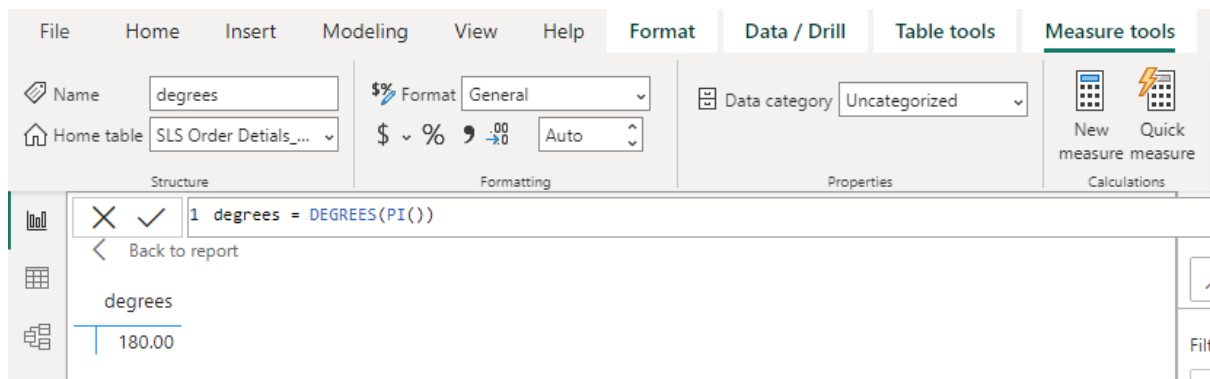
DAX Degrees Math Function

The degrees function converts a given angle from radians into degrees.

Syntax: DEGREES (angle)

- **angle:** The angle that you want to convert, in radians.

Example: degrees = DEGREES(PI())



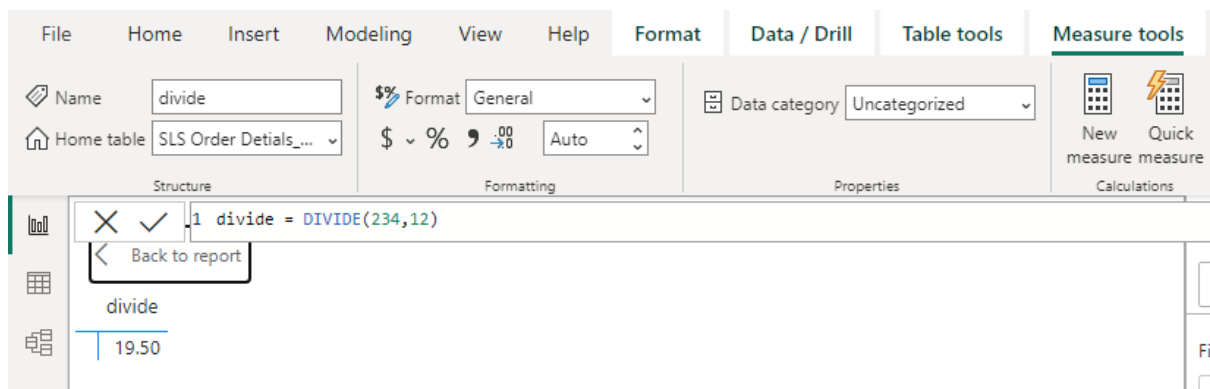
DAX Divide Math Function

This function divides and provides a different result, or BLANK () when dividing by 0, as appropriate.

Syntax: ***DIVIDE***(<numerator>, <denominator> [, <alternate result>])

- **numerator:** The division factor or number.
- **denominator:** The number that must be divided by.
- **alternate result:** The value returned when a division by zero goes wrong (optional). In the absence of a value, the default is BLANK ().

Example: divide = DIVIDE(234,12)



divide

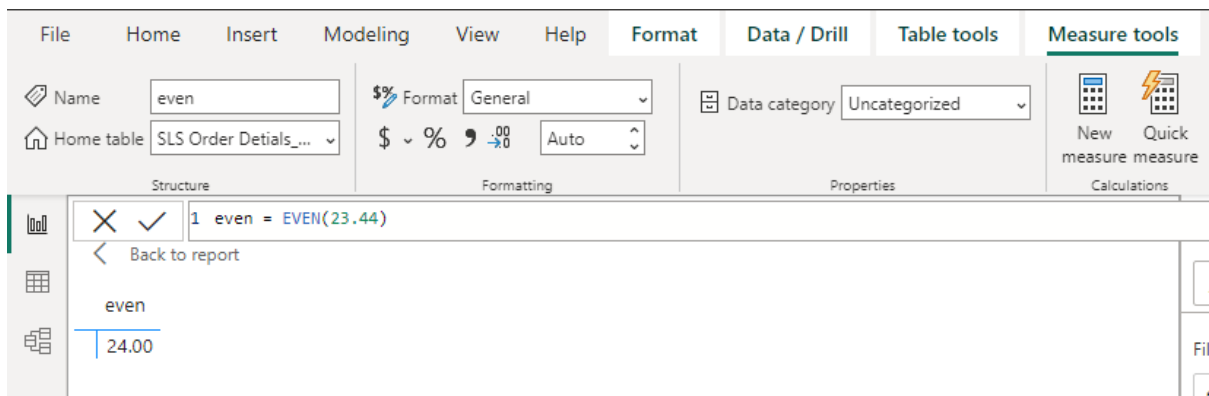
DAX Even Math Function

The number is given back and rounded to the next even integer. This function can be used to process objects that come in pairs. A packing box, for instance, can accommodate rows of one or two things. When the number of objects, rounded to the nearest two, equals the crate's capacity, the crate is considered full.

Syntax: ***EVEN*** (number)

- **number:** The number you wish to round.

Example: even = EVEN(23.44)



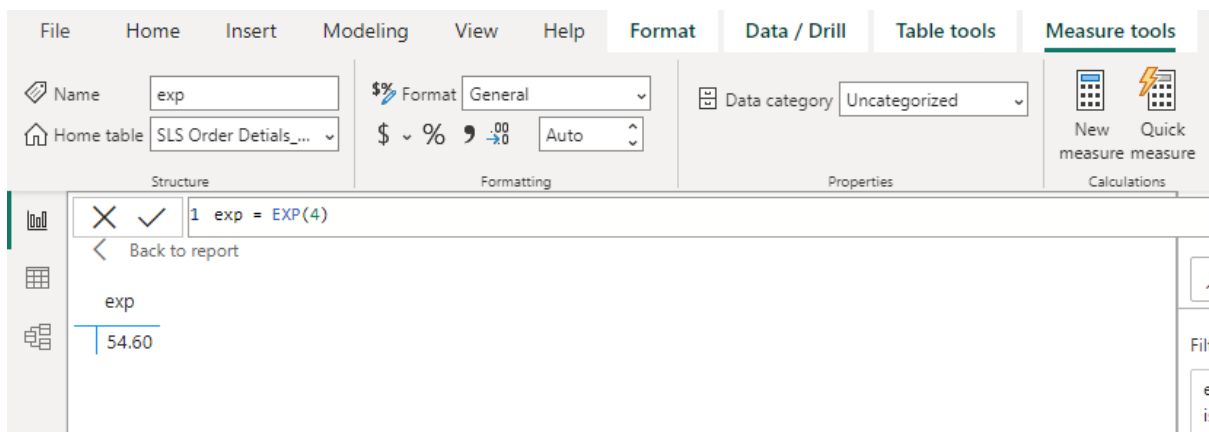
DAX Exp Math Function

Returns e to the power of the specified number. The natural logarithm's base, 2.71828182845904, is equal to the constant e.

Syntax: EXP(<number>)

- number:** The base e was affected by the exponent. The natural logarithm's base, 2.71828182845904, is equal to the constant.

Example: exp = EXP(4)



exp

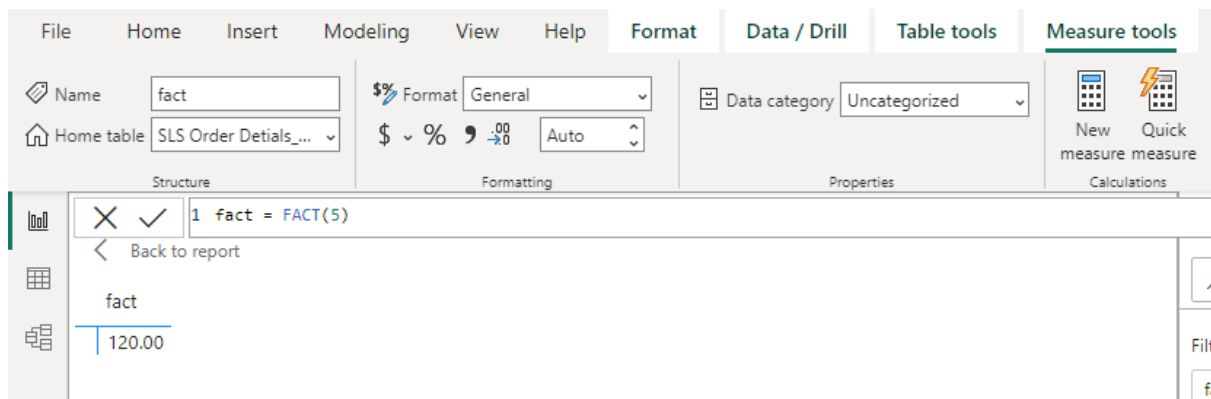
DAX Fact Math Function

The series 1*2*3*...*, ending in the provided number, is returned as the factorial of the supplied number.

Syntax: FACT(<number>)

- number:** The positive, non-negative number that you want to compute the factorial for.

Example: fact = FACT(5)



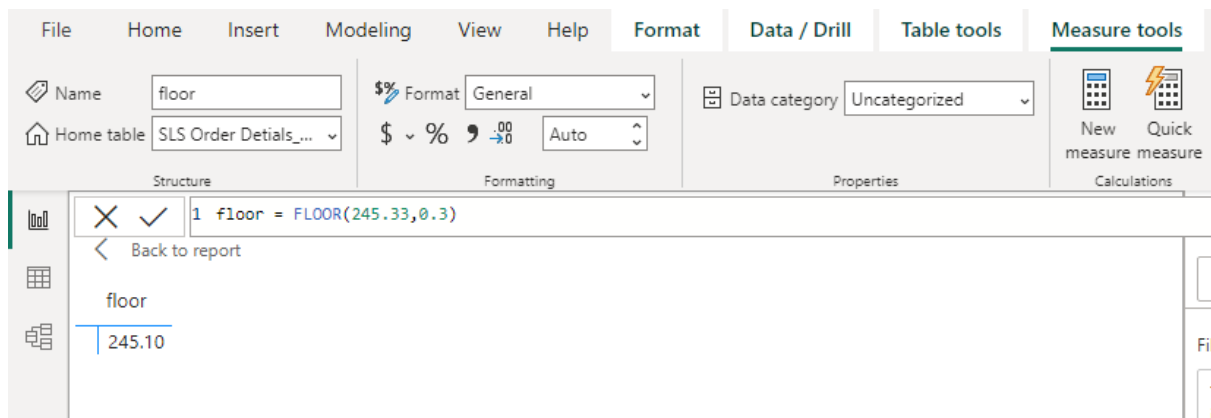
DAX Floor Math Function

Brings a number down to its nearest multiple of importance by rounding it down toward zero.

Syntax: *FLOOR(<number>, <significance>)*

- **number:** The number you intend to round.
- **significance:** The number you wish to round to in multiples. Both the quantity and the significance of the arguments must be either positive or negative.

Example: floor = FLOOR(245.33,0.3)



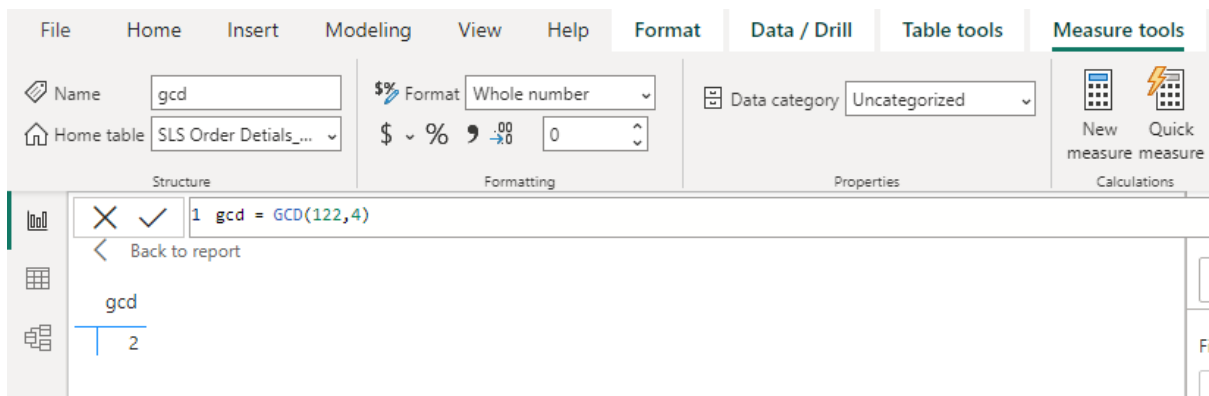
DAX GCD Math Function

This function returns the largest common divisor of two or more integers. The biggest integer that divides both numbers 1 and 2 without leaving a residual is known as the greatest common divisor.

Syntax: *GCD (number1, [number2], ...)*

- **number1:** Number 1 is necessary; all other numbers are optional. values from 1 to 255. All values that are not integers are trimmed.

Example: gcd = GCD(122,4)



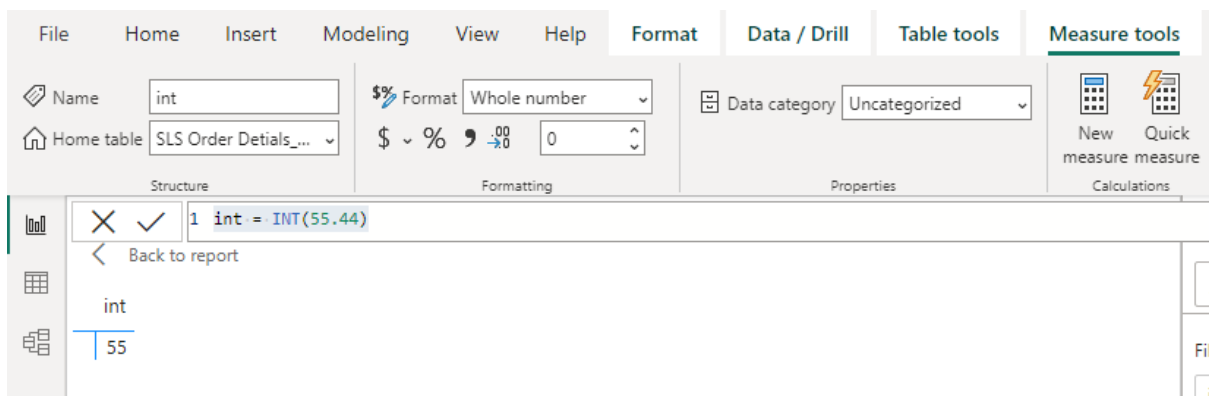
DAX INT Math Function

Round and gives a number down to the nearest integer.

Syntax: *INT(<number>)*

- **number:** The number you intend to round.

Example: int = INT(55.44)



int

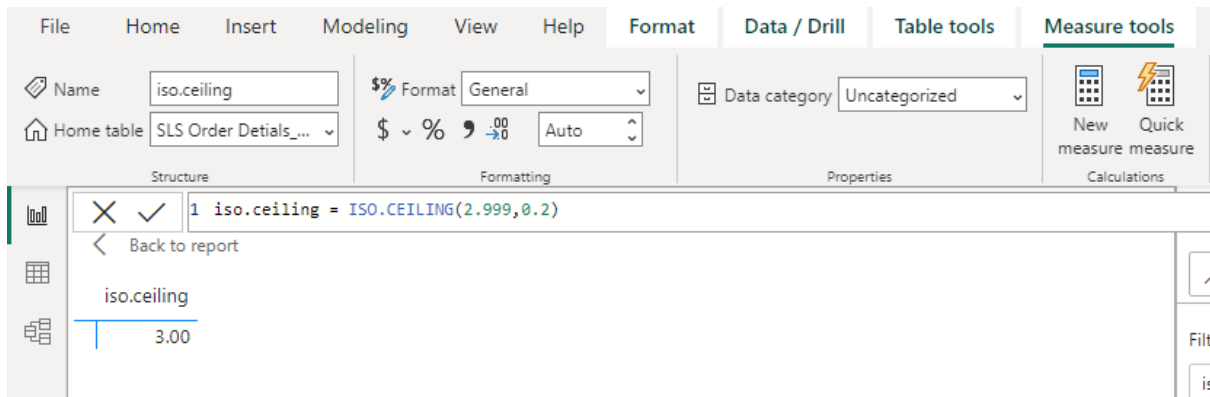
DAX Iso.Ceiling Math Function

Increases a number by rounding it up to the nearest integer or significant multiple.

Syntax: *ISO.CEILING(<number> [, <significance>])*

- **number:** The number you wish to round, or a mention of a column of numbers.
- **significance:** The significant multiple you want to round to (optional). For instance, enter 1 to round to the nearest integer. The amount is rounded up to the next integer if the unit of importance is not given.

Example: iso.ceiling = ISO.CEILING(2.999,0.2)



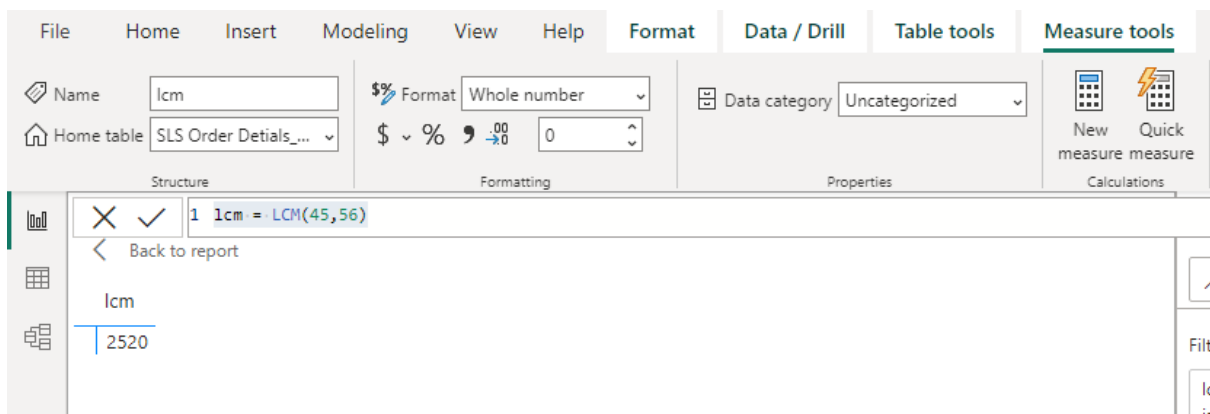
DAX LCM Math Function

The least frequent multiple of integers is returned. The smallest positive integer that is a multiple of all the integer parameters (number1, number2, etc.) is known as the least common multiple. To add fractions with various denominators, use LCM.

Syntax: *LCM (number1, [number2], ...)*

- **number1:** Number 1 is necessary; all other numbers are optional. For numbers between 1 and 255, you wish to find the least frequent multiple. Value is shortened if it is not an integer.

Example: lcm = LCM(45,56)



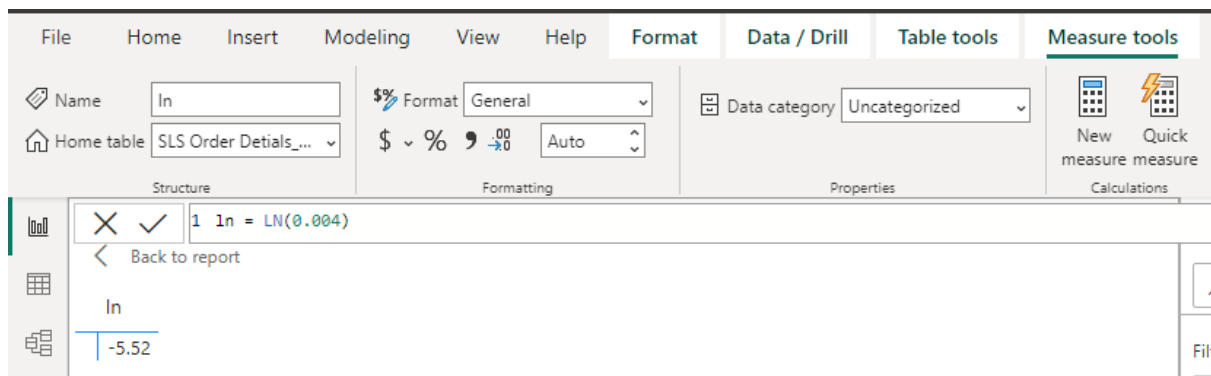
DAX LN Math Function

Gives a number's natural logarithm. Based on the value of the constant e, natural logarithms (2.71828182845904).

Syntax: *LN(<number>)*

- **number:** The positive integer whose natural logarithm you seek.

Example: ln = LN(0.004)



ln

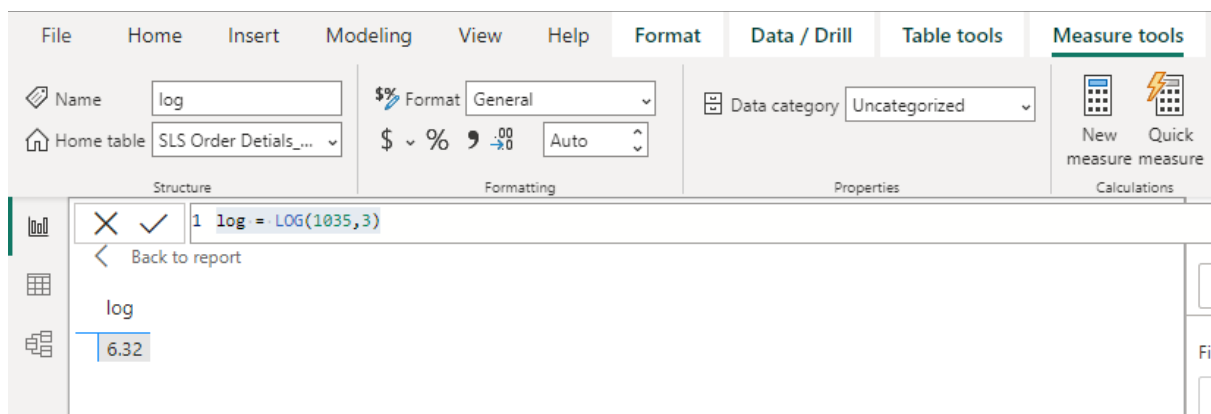
DAX LOG Math Function

Gives a number's logarithm to the base you specify.

Syntax: *LOG(<number>, <base>)*

- **number:** The positive number you're looking for the logarithm for.
- **base:** The logarithm's base. When left out, the base is 10.

Example: log = LOG(1035,3)



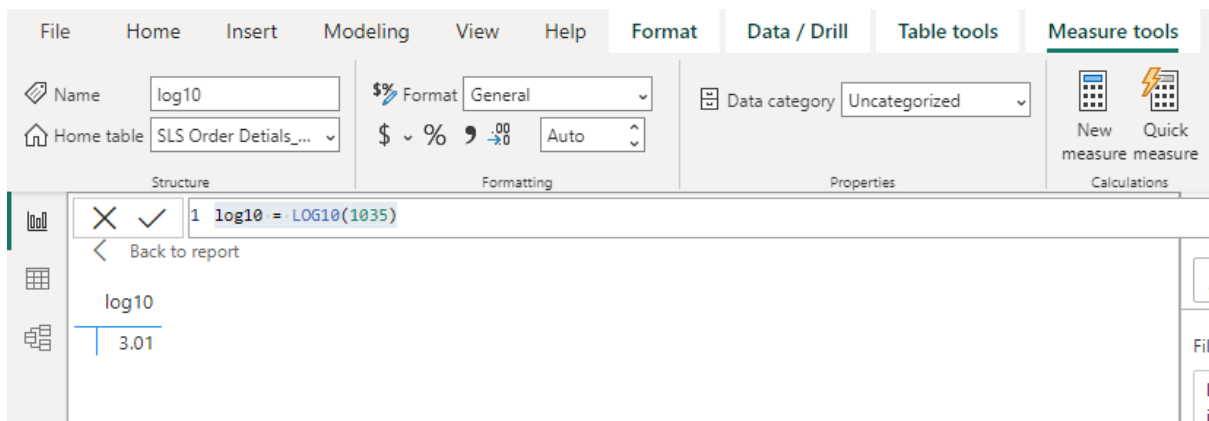
DAX LOG10 Math Function

Gives the base-10 logarithm of a number.

Syntax: *LOG10(<number>)*

- **number:** A positive number for which the base-10 logarithm is desired.

Example: log10 = LOG10(1035)



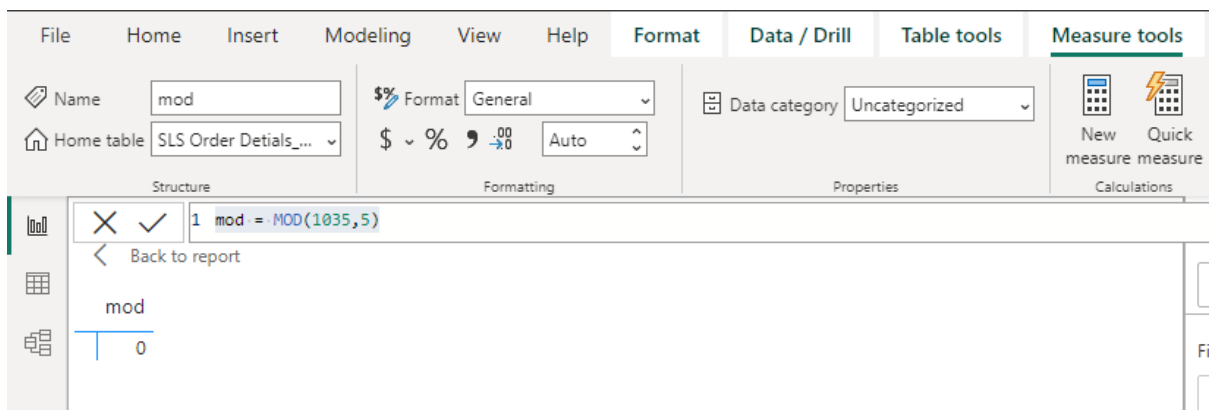
DAX MOD Math Function

Returns the leftover amount after dividing a number by a divisor. The sign of the result is always the same as the divisor.

Syntax: *MOD(<number>, <divisor>)*

- **number:** The figure for which you need to calculate the divisional remainder.
- **divisor:** The figure you want to divide by.

Example: mod = MOD(1035,5)



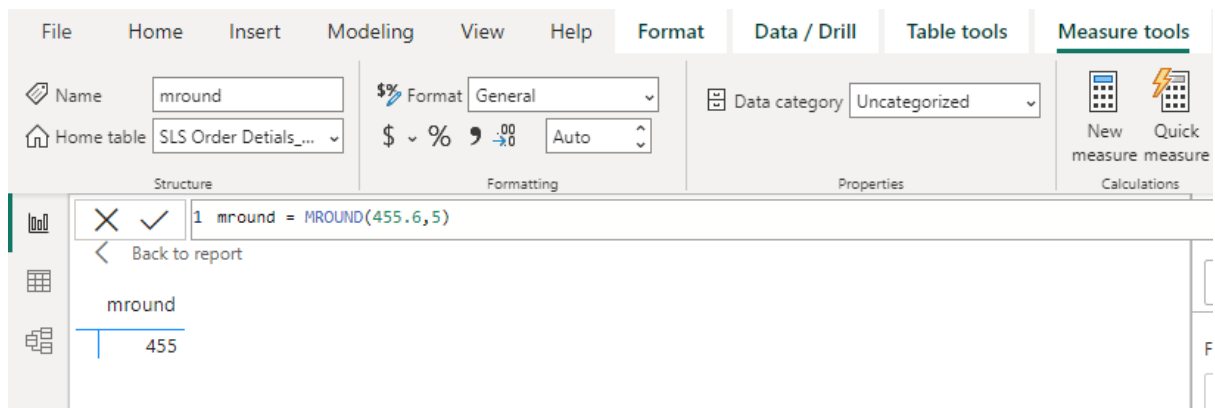
DAX MROUND Math Function

Gives you a number with the necessary multiple rounded off.

Syntax: *MROUND(<number>, <multiple>)*

- **number:** The number to round.
- **multiple:** The significant multiple that you wish to round the number to.

Example: mround = MROUND(455.6,5)



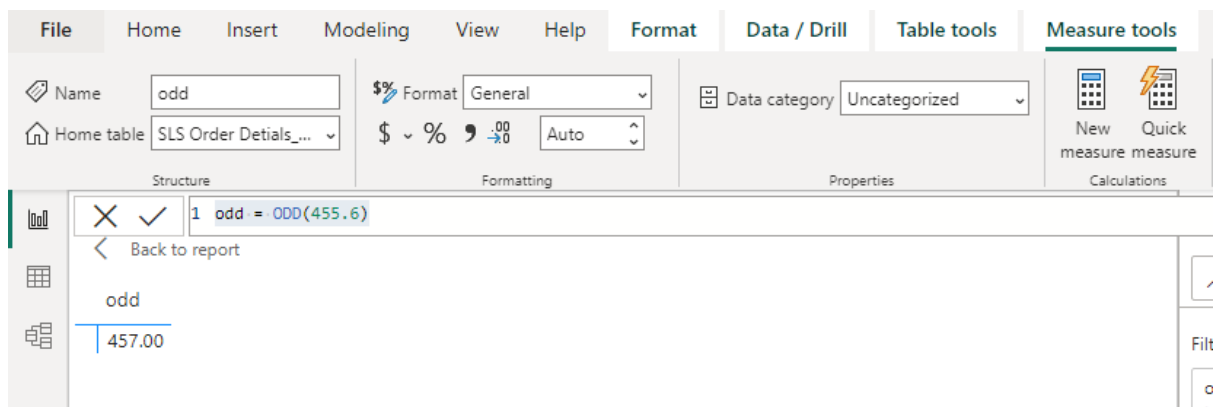
DAX ODD Math Function

The number is given back, rounded to the nearest odd integer.

Syntax: *ODD (number)*

- **number:** The number to round.

Example: odd = ODD(455.6)

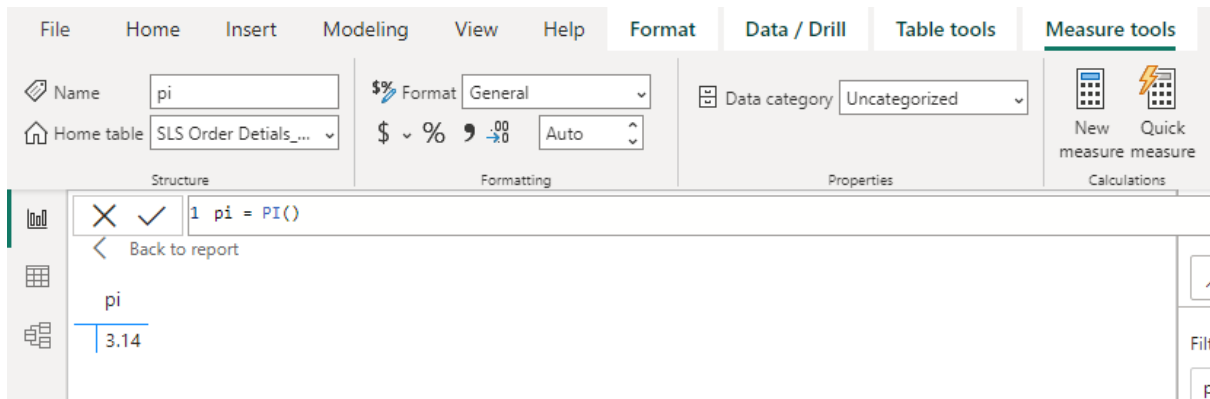


DAX Pi Math Function

Gives Pi in decimal form, 3.14159265358979, with a 15-digit precision.

Syntax: *PI()*

Example: pi = PI()



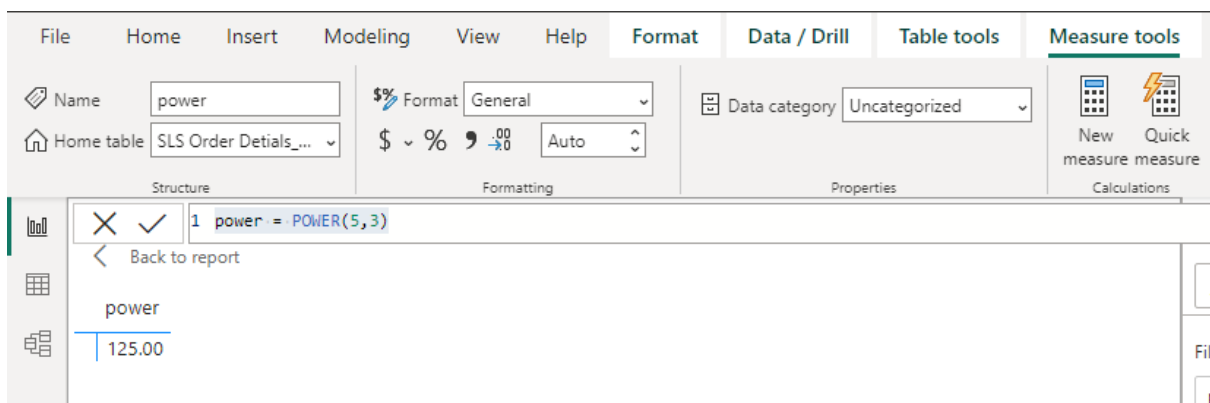
DAX Power Math Function

Returns the value of a number raised to a power of exponent.

Syntax: *POWER(<number>, <power>)*

- **number:** Any real number can serve as the base number.
- **power:** The higher exponent from the base number.

Example: power = POWER(5,3)



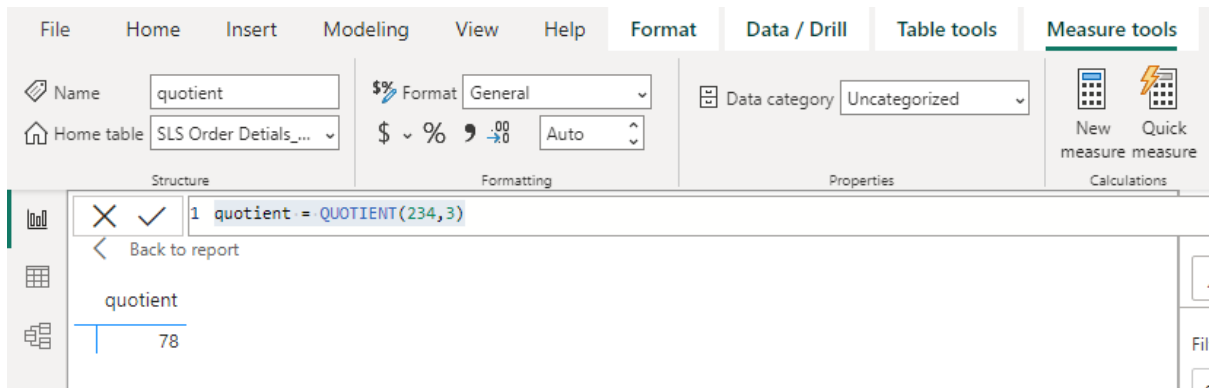
DAX Quotient Math Function

The division is done, and just the integer part of the result is returned. When you want to throw away the divisional leftover, use this function.

Syntax: *QUOTIENT(<numerator>, <denominator>)*

- **numerator:** The division factor, or dividend.
- **denominator:** The divisor, or quantity by which to divide.

Example: quotient = QUOTIENT(234,3)



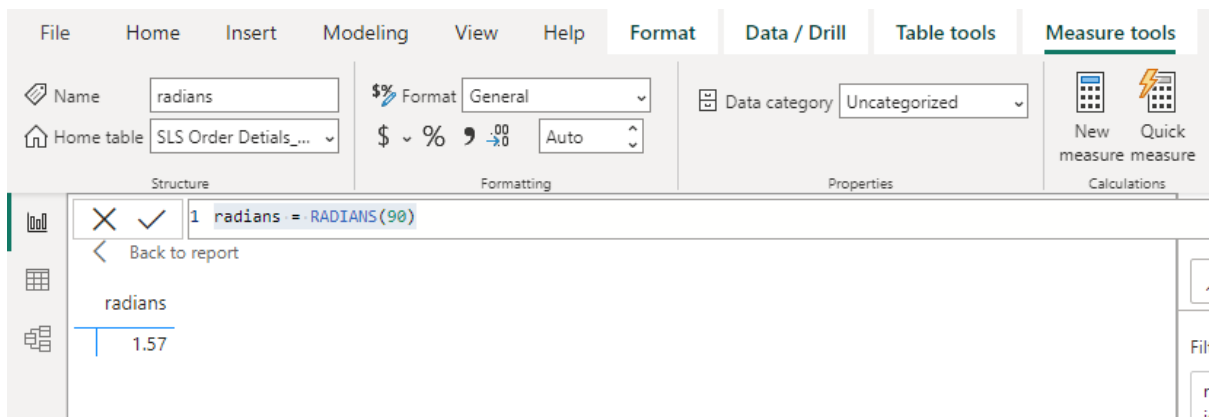
DAX Radians Math Function

Converts an angle from degrees to radians.

Syntax: *RADIANS (angle)*

- **angle:** An angle that you want to convert from degrees (Required)

Example: radians = RADIANS(90)



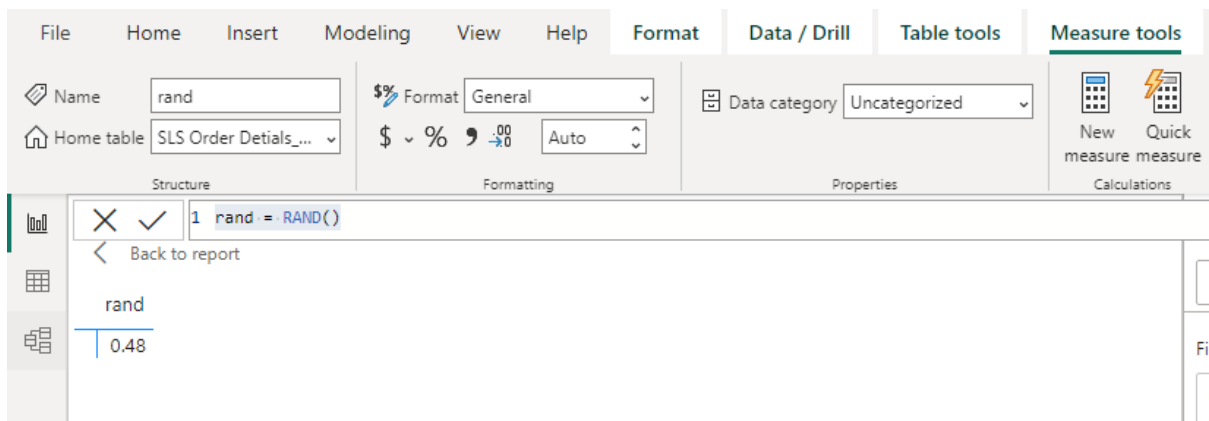
DAX Rand Math Function

Returns a uniformly distributed random number that is higher than or equal to 0 and less than 1. Every time the cell containing this function is recalculated, a different number is returned.

Syntax: *RAND ()*

To avoid mistakes like division by zero, the RAND function cannot return a value of zero.

Example: rand = RAND()



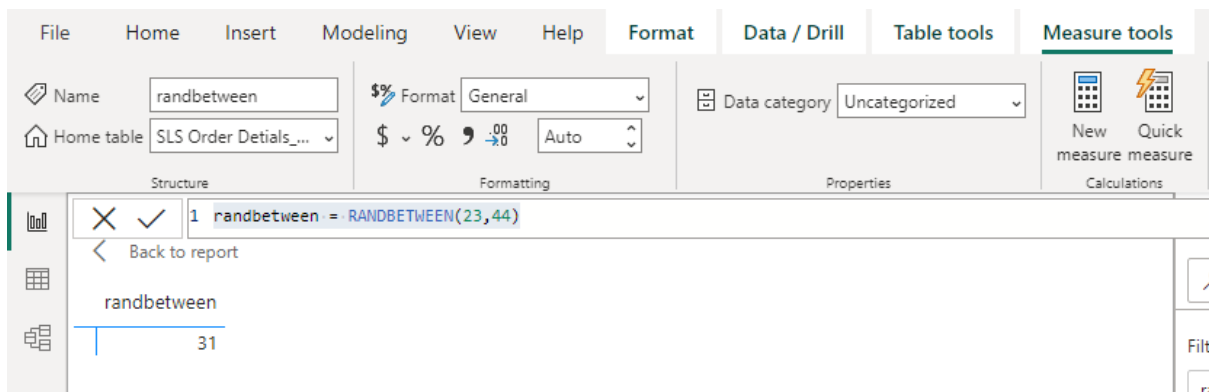
DAX RandBetween Math Function

Gives you a random number that falls between the two values you provide.

Syntax: *RANDBETWEEN(<bottom>, <top>)*

- **bottom:** The smallest integer that will be returned by the function.
- **top:** The function will return the greatest possible integer.

Example: randbetween = RANDBETWEEN(23,44)



DAX Round Math Function

Rounds a value to the specified number of digits.

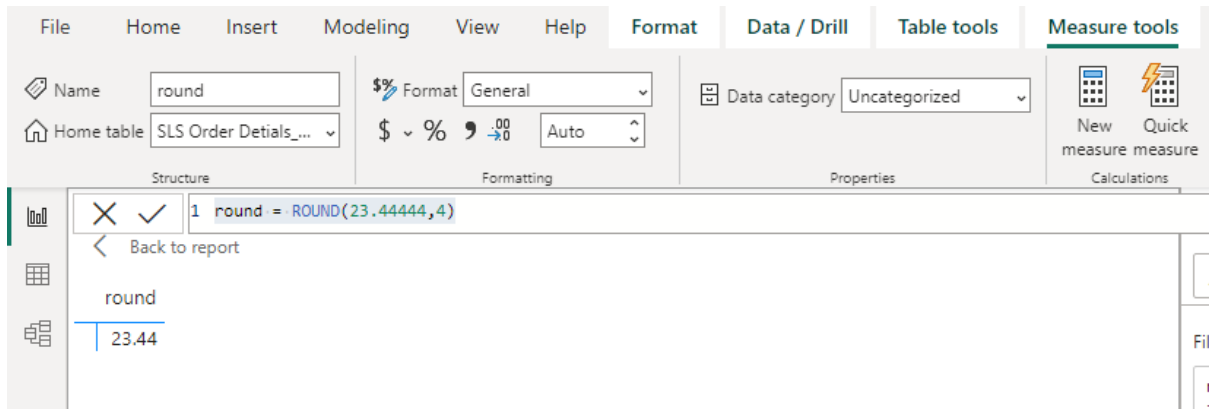
- The number is rounded to the specified number of decimal places if num digits are higher than zero.
- The number is rounded to the nearest integer if the num digit is 0.
- The number is rounded to the left of the decimal point if the num digits are less than 0.

Syntax: *ROUND(<number>, <num_digits>)*

- **number:** The value you intend to round.

- **num_digits:** The number of digits you wish to round to. A value of zero rounds to the nearest integer; a negative value rounds digits to the left of the decimal point.

Example: round = ROUND(23.44444,4)



DAX RoundDown Math Function

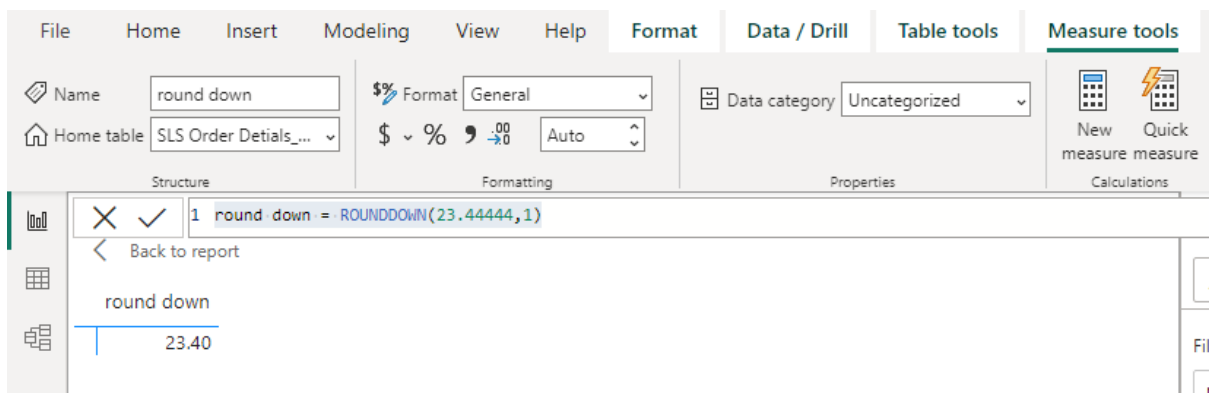
Rounds a number in the direction of zero.

- The value in number is rounded down to the provided number of decimal places if the num digits are more than zero.
- The value in number is rounded to the nearest integer if the num digits are 0.
- The value in number is rounded to the left of the decimal point if the num digits are less than 0.

Syntax: `ROUNDDOWN(<number>, <num_digits>)`

- **number:** The real value you intend to be rounded down.
- **num_digits:** The number of digits you wish to round to. A value of zero rounds to the nearest integer; a negative value rounds digits to the left of the decimal point.

Example: round down = ROUNDDOWN(23.44444,1)



DAX RoundUp Math Function

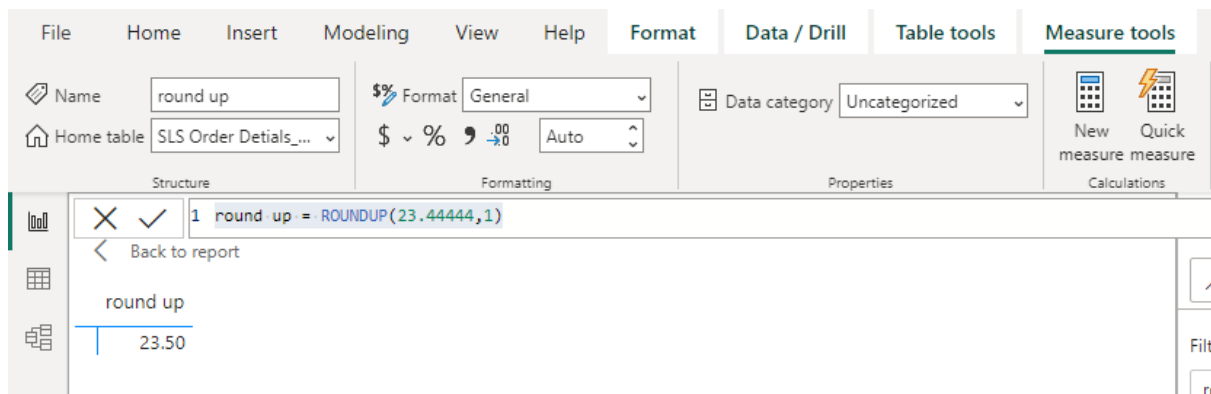
It rounds a number up, away from 0 (zero).

- The number is rounded up to the provided number of decimal places if the num digits are larger than 0 (zero).
- The number is rounded up to the nearest integer if the num digit is 0.
- The number is rounded to the left of the decimal point if the num digits are less than 0.

Syntax: *ROUNDUP*(<number>, <num_digits>)

- **number:** The real value you intend to round up.
- **num_digits:** The number of digits you wish to round to. If the num digits are 0 or omitted, the number is rounded to the nearest integer when a negative value rounds to the left of the decimal point.

Example: round up = ROUNDUP(23.44444,1)



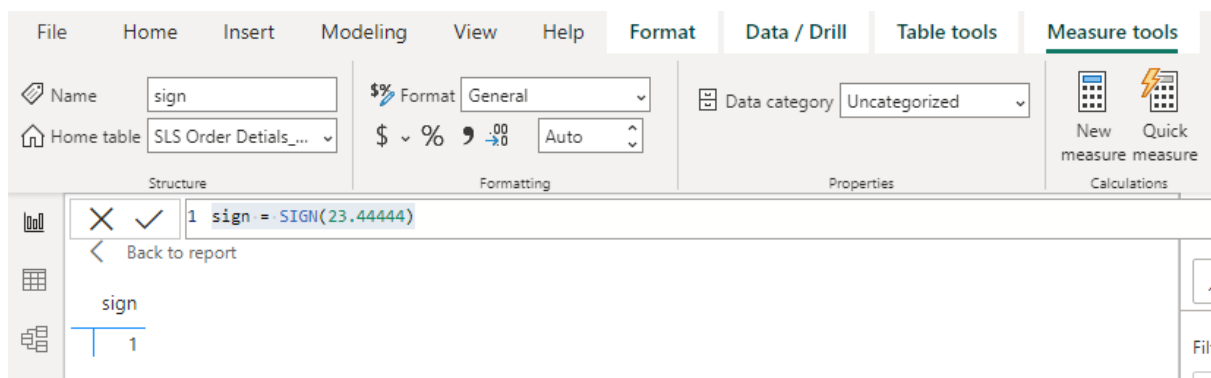
DAX Sign Math Function

Identifies a number's sign, a calculation's outcome, or a value in a column. If the number is positive, the function returns 1, if it is zero, it returns 0, and if it is negative, it returns -1.

Syntax: *SIGN*(<number>)

- **number:** A column of numbers, a real number, or a phrase that results in a number.

Example: sign = SIGN(23.44444)



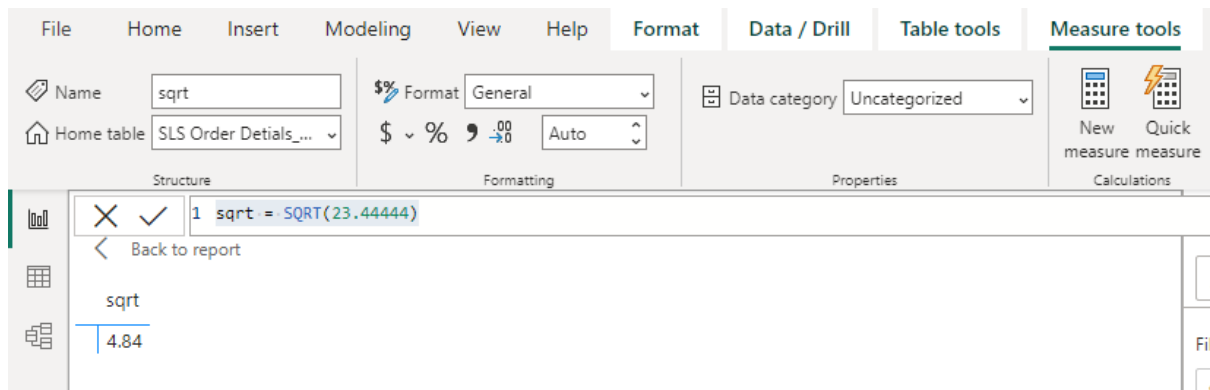
DAX Sqrt Math Function

Gives the square root of a number.

Syntax: *SQRT(<number>)*

- **number:** A column of numbers, the number for which you want the square root or a phrase that evaluates to a number.

Example: sqrt = SQRT(23.44444)



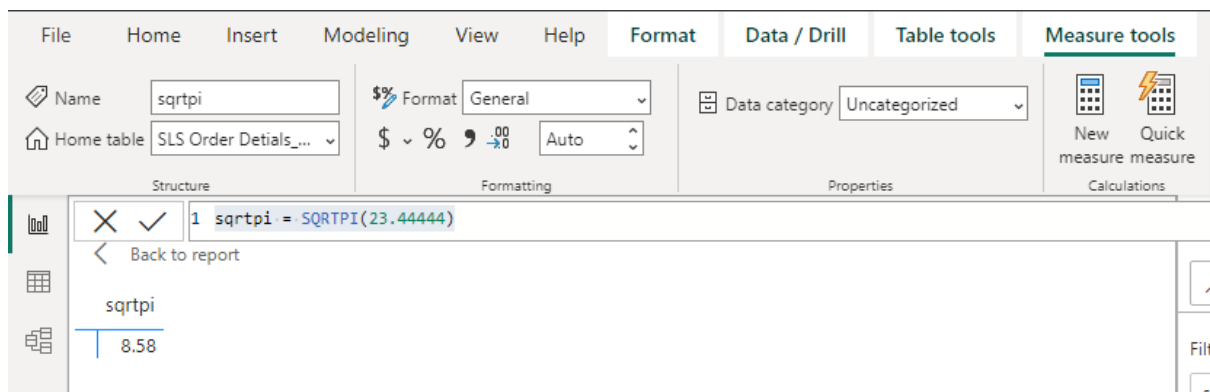
DAX SqrtPi Math Function

Gives the (number times pi) square root.

Syntax: *SQRTPI (number)*

- **number:** Required, the value that pi is multiplied by.

Example: sqrtpi = SQRTPI(23.44444)



DAX Trunc Math Function

Removes the fractional or decimal portion of a number to convert it to an integer.

Syntax: *TRUNC(<number>, <num_digits>)*

- **number:** The value you want to truncate.
- **num_digits:** A value indicating the truncation's precision; if omitted, 0 (zero)

Example: truncate = TRUNC(45.0000345,6)

The screenshot displays the Microsoft Power BI Desktop interface, specifically the 'Format' tab. The ribbon includes sections for 'Structure', 'Formatting', 'Properties', and 'Measure tools'. In the 'Structure' section, the 'Name' field is set to 'truncate' and the 'Home table' is 'SLS Order Details_...'. The 'Formatting' section shows the 'Format' dropdown set to 'General' and the 'Data category' set to 'Uncategorized'. The 'Measure tools' section includes 'New measure' and 'Quick measure' buttons. Below the ribbon, the 'Structure' pane shows a table named 'truncate' with a single row containing the value '45.00'. The 'Back to report' button is visible.

truncate
45.00