



Project Math & Stats Functions

1) Create new measures to calculate the **maximum product_retail_price** ([**Max Retail Price**]) and the **minimum product_retail_price** ([**Min Retail Price**]), assign both measures to the **Product_Lookup** table, and format as **currency** with two decimal places.

The 'Manage Measures' dialog box is open, showing the following measures and formulas:

Measure	Formula
Avg Retail Price	AVERAGE(Product_Lookup[product_retail_price])
Max Retail Price	MAX(Product_Lookup[product_retail_price])
Min Retail Price	MIN(Product_Lookup[product_retail_price])
Quantity Returned	SUM>Returns[quantity])
Recyclable Products	COUNT(Product_Lookup[recyclable])
Return Rate	DIVIDE([Quantity Returned],[Total Quantity],0)
Total Quantity	SUM(Transactions[quantity])
Total Transactions	COUNTROWS(Transactions)
Unique Products	DISTINCTCOUNT(Product_Lookup[product_id])

The pivot table shows the results of these measures for various products:

Product	Max Retail Price	Min Retail Price
23	\$3.94	\$0.73
26	\$3.82	\$0.58
24	\$3.85	\$0.56
23	\$3.51	\$0.57
25	\$3.87	\$0.55
19	\$3.88	\$0.66
20	\$3.90	\$0.76
21	\$3.87	\$0.51
13	\$3.95	\$0.68
20	\$3.96	\$0.60
18	\$3.95	\$0.51
18	\$3.49	\$0.53
19	\$3.95	\$0.52
20	\$3.81	\$0.64
18	\$3.77	\$0.50
18	\$3.95	\$0.51
18	\$3.95	\$0.59
21	\$3.91	\$0.51
19	\$3.73	\$0.57
19	\$3.92	\$0.51
16	\$3.71	\$0.56
21	\$3.78	\$0.58
12	\$3.96	\$0.50
13	\$3.61	\$0.53
17	\$3.58	\$0.61
16	\$3.97	\$0.72
13	\$3.98	\$0.57

- Which tables in the model are "legal" to pull into the pivot when you're analyzing these measures as values?

→ Any connected and downstream tables: Transactions, Returns, and Product_Lookup

- Pull in *product_brand* as **row labels**. What's the maximum retail price for "Green Ribbon" products?

→ 3.11

2) Create a new measure to calculate the **average** *customer_age* ([**Average Age**]), assign to the **Customer_Lookup** table, and format as a **decimal number** with one decimal place.

The screenshot shows the 'Measure' dialog box in Power BI. The 'Table Name' is set to 'Customer_Lookup'. The 'Measure Name' is 'Average Age'. The 'Value Description' field is empty. The 'Formula' field contains the DAX formula '=AVERAGE(Customer_Lookup[age])'. Below the formula field, there is a 'Category' dropdown menu with options: General, Date, Number (selected), Currency, and TRUE\FALSE. To the right of the category menu is the 'Format' section, which includes a 'Format' dropdown set to 'Decimal Number', a 'Decimal Places' spinner set to '1', and a checkbox for 'Use 1000 separator (,)' which is currently unchecked. At the bottom right are 'OK' and 'Cancel' buttons.

- Update your PivotTable layout to show *customer_city* on rows. What's the average age of customers who live in Imperial Beach?

→ 76.8


3) Create a new measure to calculate the **total number of customers** ([**Total Customers**]) based on the number of rows in the **Customer_Lookup** table, and format as a **whole number** with a thousands separator.

Measure

Table Name: Customer_Lookup

Measure Name: Total Customers

Value Description:

Formula:  Check DAX Formula

=COUNT(Customer_Lookup[customer_id])

Category:

- General
- Date
- Number
- Currency
- TRUE\FALSE

Format: Whole Number

☒ Use 1000 separator (,)

OK Cancel

- Pull *gender* into rows. How many female customers overall? Male customers?

→ F: 5,097, M: 5,184


4) Create a new measure to calculate the **number of unique cities** ([Unique Cities]) based on the *customer_city* field in the **Customer_Lookup** table, and format as a **whole number** with a thousands separator.

Measure

Table Name: Customer_Lookup

Measure Name: Unique Cities

Value Description:

Formula:  Check DAX Formula

=DISTINCTCOUNT(Customer_Lookup[customer_city])

Category:

- General
- Date
- Number
- Currency
- TRUE\FALSE

Format: Whole Number

☒ Use 1000 separator (,)

OK Cancel

- Pull *customer_country* into rows. How many unique customer cities are represented by customers from Mexico? From the USA?

→ **13** unique cities from customers in Mexico, **78** unique cities from customers in USA