

Welcome to Get on My Level - Mastering LOD Calculations!

This is where you will find step-by-step instructions to follow along during the session. If you fall behind or otherwise need to catch up to where we are with the group, take a look here to find where we are and the steps we've covered.

Today's session will contain **Exercises**, **Challenges**, and **Jedi Challenges**.

We will walk through the **Exercises** as a group, with slides to guide our discussion and ensure understanding.

You will have time to get hands-on with each of the **Challenges** to practice the concepts and test your own understanding.

At the end of the session, there will be three **Jedi Challenges** you can choose from to challenge yourself and prove mastery. Time permitting, we will vote on which of these Jedi Challenges will be reviewed as a group.

Fancy yourself a Tableau Jedi? We challenge you to get through more than one of these (feel free to get started on them early if you find some free time during other parts of our session)!


Questions? Raise your hand and one of our Room Assistants will be right with you.

Intro: Multiple Aggregations

Exercise

What is the Average Sales per Order?

- ☐ 1. Write a calculation to get the Sum of Sales for each Order ID.



The screenshot shows a Tableau calculation editor window titled "Sales per Order" with a "Superstore" icon and a close button. The calculation text area contains the formula: `{ FIXED [Order ID] : SUM([Sales]) }`. At the bottom, a status bar indicates "The calculation is valid." and "1 Dependency". There are "Apply" and "OK" buttons.

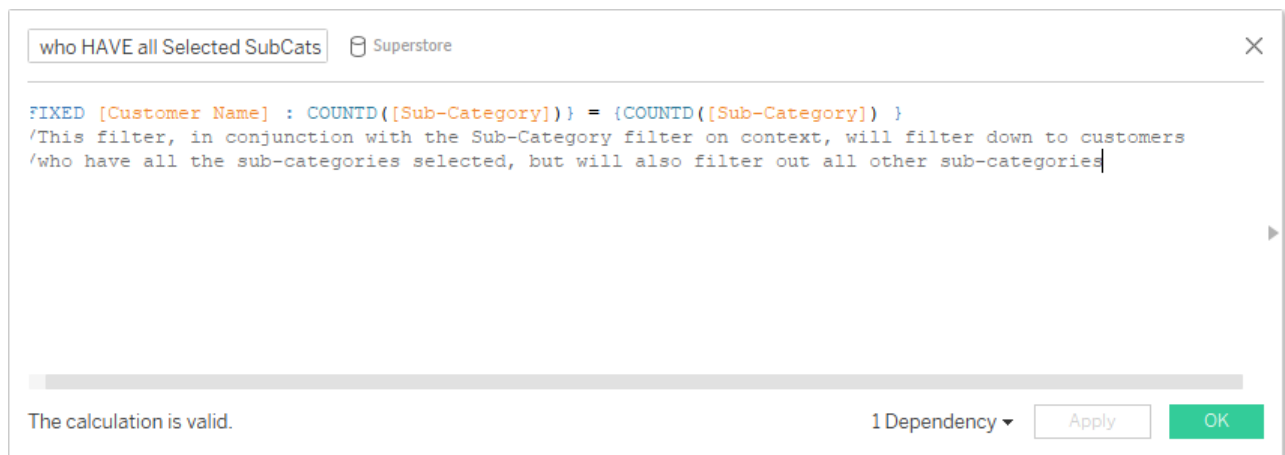
- ☐ 2. Drag the Sales per Order field to Rows, and change the aggregation type to AVG().

1: Selection Comparisons

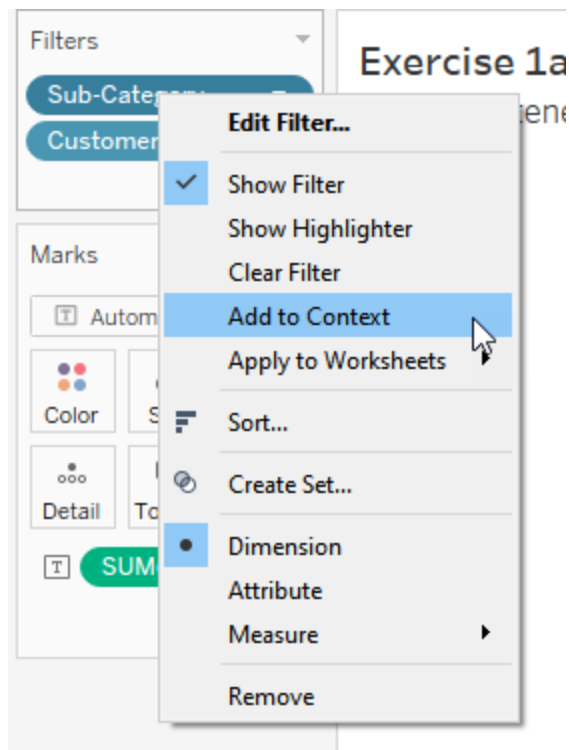
1a - Exercise

Show the Customers that have purchased from all the Sub-Categories selected in the filter. Select Fasteners, Machines, and Supplies.

- ☐ 1. Write a calculation that compares a customer's # of Sub-Categories to the total # of Sub-Categories. Filter to TRUE.



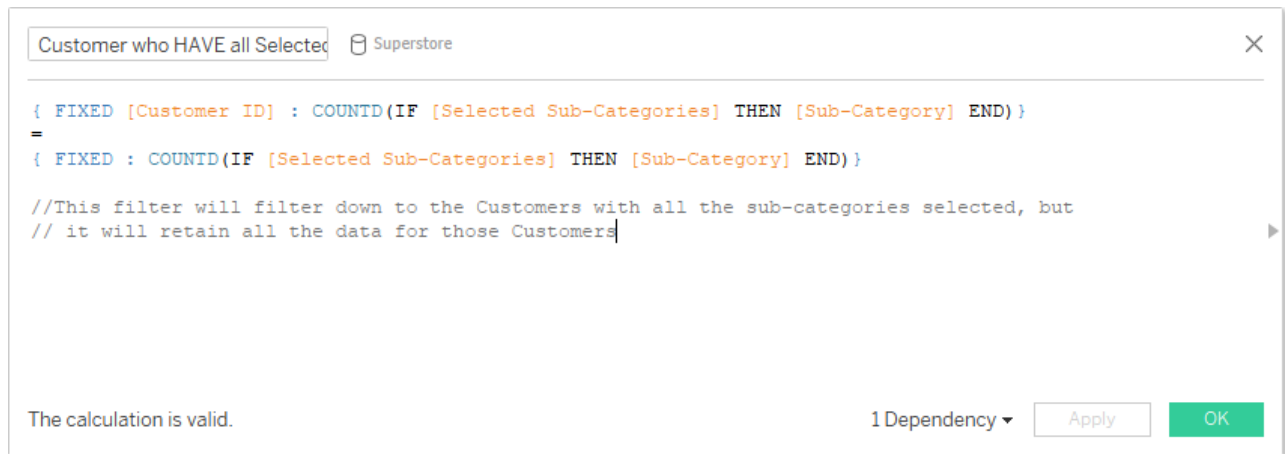
- ☐ 2. Right-click on the Sub-Category filter and select 'Add to Context'.



1b - Challenge

Show all the data for Customers that have purchased from all the Sub-Categories selected in the Set list. Select Fasteners, Machines and Supplies.

- ☐ 1. Create a calculation that compares a Customer's count of selected Sub-Categories to the total count of selected Sub-Categories. Add to the filter shelf.



2: Pivoting

2a - Exercise

What is the gap between Customers' 1st and 2nd highest Sales value?

- ☐ 1. Write a calculation to find the highest Sales value per Customer.

Max Sale Amount per Customer

Superstore

```
{ FIXED [Customer Name] : MAX([Sales]) }
```

The calculation is valid.

3 Dependencies ▼

Apply

OK

- ☐ 2. Write a calculation to find the 2nd highest Sales Amount per Customer.

2nd Max Sale Amount per Custo

Superstore

```
{ FIXED [Customer Name] :  
  
MAX(IF [Sales] != [Max Sale Amount per Customer]  
THEN [Sales] END)  
  
}
```

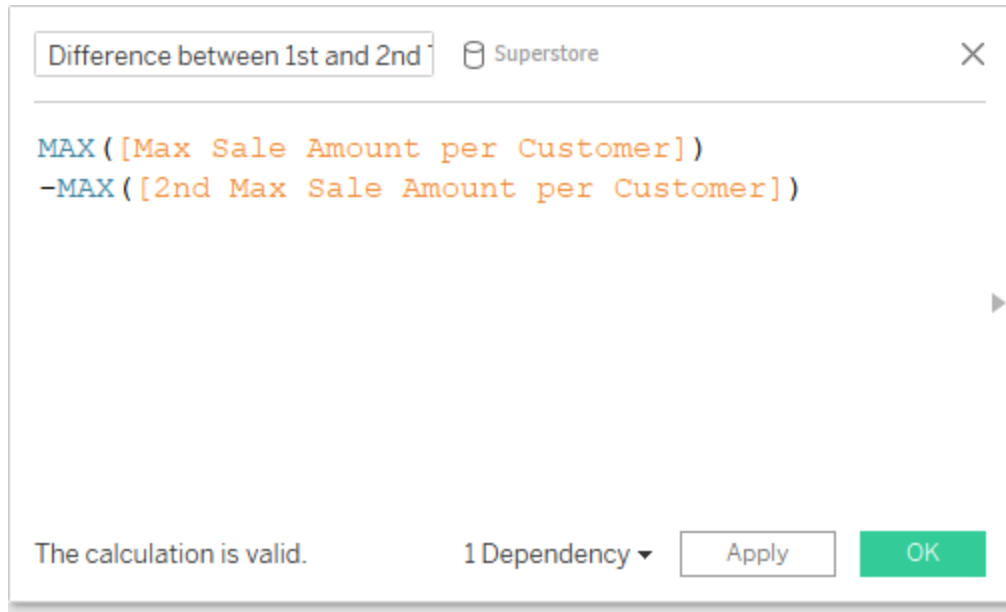
The calculation is valid.

2 Dependencies ▼

Apply

OK

- ☐ 3. Write a calculation to find the difference between calculation 1 and 2.

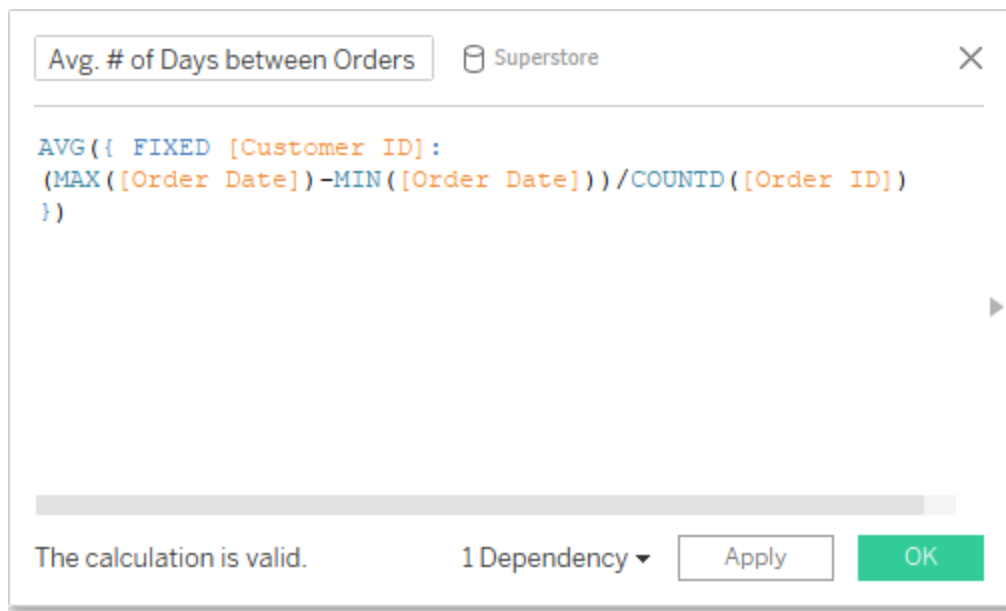


- ☐ 4. Place each of these calculations on the Columns shelf.

2b - Challenge

Find the average number of days between purchases for each Customer.

- ☐ 1. Write a calculation that finds the difference between each Customer's first and last Order Dates, and divide it by the number of Orders they have made.



3: Pivot, Isolate, Propagate

3a - Exercise

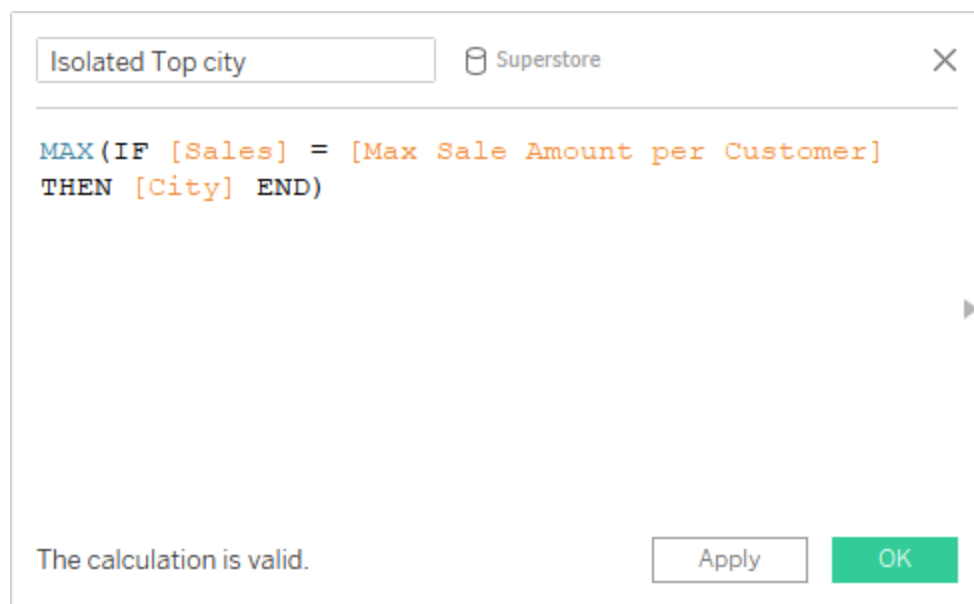
In which City did each Customer spend the most in one Sale?

- ☐ 1. If not already created from challenge 2a, write a calculation to find the Max Sale Amount for each Customer.



The screenshot shows a Tableau calculation dialog box titled "Max Sale Amount per Customer" with a dropdown menu set to "Superstore". The calculation text area contains the formula: `{ FIXED [Customer Name] : MAX([Sales]) }`. At the bottom, a status bar indicates "The calculation is valid." and "3 Dependencies". There are "Apply" and "OK" buttons.

- ☐ 2. Write a calculation to isolate the Top City for each Customer (for simplicity, the calculation can be inserted directly into the next calculation if desired).



The screenshot shows a Tableau calculation dialog box titled "Isolated Top city" with a dropdown menu set to "Superstore". The calculation text area contains the formula: `MAX(IF [Sales] = [Max Sale Amount per Customer] THEN [City] END)`. At the bottom, a status bar indicates "The calculation is valid." and there are "Apply" and "OK" buttons.

- ☐ 3. Write a calculation to propagate each Customer's Top City to all the rows for that Customer.

Superstore ✕

```
{ FIXED [Customer Name] :  
MAX(IF [Sales] =  
[Max Sale Amount per Customer (copy)]  
THEN [City] END) }
```

The calculation is valid.

1 Dependency ▾

Apply

OK

- ☐ 4. Bring Customer Top City field to the Rows shelf.

3b - Challenge

View Sales by State on a filled map. Label each State with the City that has the highest Sales in that State.

- ☐ 1. Write a calculation to find the total Sales for each City.

Superstore ✕

```
{ FIXED [State], [City] : SUM([Sales]) }
```

The calculation is valid.

3 Dependencies ▾

Apply

OK

- ☐ 2. Write a calculation to find the name of the City with the highest Sales for each State.

2. State's Highest City Sales

Superstore

X

```
{ FIXED [State] : MAX([1. City Sales]) }
```

The calculation is valid.

2 Dependencies ▾

Apply

OK

- ☐ 3. Write a calculation to propagate the name of the Top City for each State across all rows of data.

3. Top City / State

Superstore

X

```
{ FIXED [State] : MAX(  
IF [1. City Sales] = [2. State's Highest City Sales]  
THEN [City] END  
)  
}
```

The calculation is valid.

1 Dependency ▾

Apply

OK

- ☐ 4. Add the final calculation to Text.

Jedi Challenges

Time permitting, we will review the solution for one of these as a group! Vote for the problem you'd like to see solved live.

1c - Jedi Challenge: Surveys and Sets

View the % of Respondents who answered each Question with an Answer selected.

- ☐ 1. Create a calculation combining the Question and Answer fields.

The screenshot shows a calculation editor window. The title bar reads "Jedi Challenge (1C) - Grammar Survey". Inside the window, there is a text input field containing "Q&A". Below it is a formula field containing the text "[Question] + \": \" + [Answers]". At the bottom of the window, there is a status bar that says "The calculation is valid." followed by "6 Dependencies" and a dropdown arrow. To the right of the status bar are two buttons: "Apply" and "OK".

- ☐ 2. Create a Set on Question, called "Selected Question". (Right-click on Question, and select "Create>Set")
- ☐ 3. Create a Set on Q&A, called "Selected Q&A". (Right-click on Q&A, and select "Create>Set")
- ☐ 4. Write a calculation for the number of selected Questions.

of Selected Q's Jedi Challenge (1C) - Grammar Survey X

{ FIXED :
COUNTD(IF [Selected Question] THEN [Question] END) }

The calculation is valid. 3 Dependencies Apply OK

- ☐ 5. Write a calculation for the number of selected Q&A's.

of Selected Q&A's Jedi Challenge (1C) - Grammar Survey X

COUNTD(IF [Selected Q&A] THEN [Question] END)

The calculation is valid. 3 Dependencies Apply OK

- ☐ 6. Write a calculation to find the respondents that have the same amount of Q&A's selected as total Questions selected. Or, create a Conditional Set to find the same result:
- A. Calculation Option:

Qualifying Respondents Jedi Challenge (1C) - Grammar Survey X

```
{ FIXED [Respondent ID] :  
SUM([# of Selected Q's])=  
[# of Selected Q&A's]  
}
```

The calculation is valid.

Apply OK

- B. Set Option:

Edit Set [Conditional Respondents] X

Name: Conditional Respondents

General Condition Top

☐ None

☐ By field:

Respondent ID Count (Distinct)

= 0

Range of Values

Min: Load

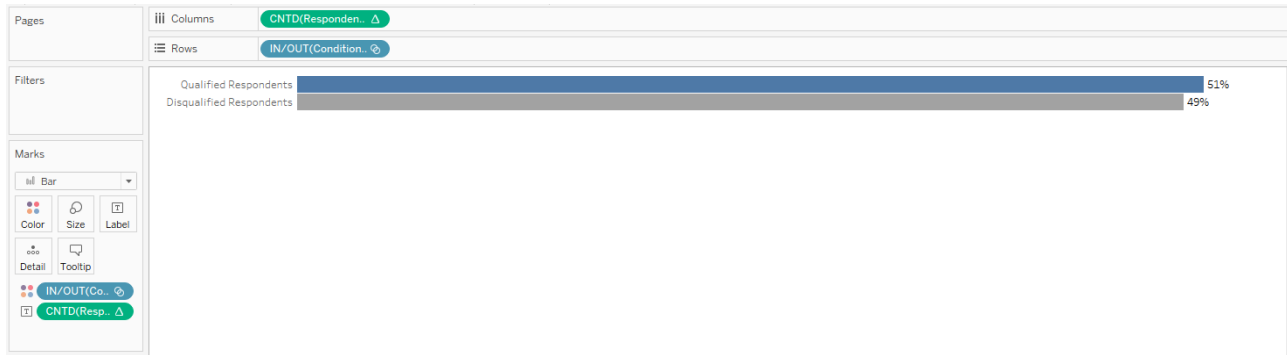
Max:

☒ By formula:

```
SUM([# of Selected Q's])=  
[# of Selected Q&A's]
```

Reset OK Cancel Apply

- ☐ 7. Add the calculation or set to the row's shelf on the "1C-RespondentCounts" sheet. Edit Aliases of True/False values if desired.



- ☐ 8. Return to the dashboard for 1C. (Create 2 Set Actions by going to "Dashboard > Actions > Add Action > Change Set Values")

- ☐ A. Set Action #1: Selected Questions:

Edit Set Action

Name

Action - Selected Q

Insert

Source Sheets

1c-Jedi Challenge

☐ 1C-RespondentCounts
 ☒ 1C-Survey Questions

Run action on

☐ Hover
 ☒ Select
 ☐ Menu
 ☐ Single-select only

Target Set

Selected Question

Running the action will

☒ Assign values to set
 ☐ Add values to set
 ☐ Remove values from set

Clearing the selection will

☐ Keep set values
 ☐ Add all values to set
 ☒ Remove all values from set

Cancel

OK

☐ B. Set Action #2: Selected Q&A's:

<https://labondemand.com/LabProfile/Instructions/137522>

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Edit Set Action

×

Name

Action - Selected Q&As

Insert ▼

Source Sheets

1c-Jedi Challenge ▼

☐ 1C-RespondentCounts
☒ 1C-Survey Questions

Run action on

☐ Hover
☒ Select
☐ Menu
☐ Single-select only

Target Set

Selected Q&A ▼

Running the action will

☒ Assign values to set
☐ Add values to set
☐ Remove values from set

Clearing the selection will

☐ Keep set values
☐ Add all values to set
☒ Remove all values from set

Cancel

OK

☐ 9. Hold the ctrl (or cmd key for Mac) and select multiple bars in the bottom view of the dashboard. The Qualified Respondents % should update accordingly.

2c - Jedi Challenge: Conditional Formatting Pivot

Display Discount, Profit, Quantity and Sales as their own rows within each Category. Add conditional formatting that colors positive numbers Green, and negative numbers Red, but only for the Same Day and Standard Class columns.

☐ 1. Write a calculation called "Field Names". The goal of this calculation is to separate the data into enough buckets to fit the number of measures desired. The best way to hack this is to translate weekdays into measure names (as long as there are less than 7 measures). This field will not be helpful outside of this specific visualization. Drag to Rows, to the right of Category.

<https://labondemand.com/LabProfile/Instructions/137522>

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Field Names Superstore ✕

```

IF DATEPART('weekday', [Order Date]) = 1 THEN 'Discount'
ELSEIF DATEPART('weekday', [Order Date]) = 2 THEN 'Profit'
ELSEIF DATEPART('weekday', [Order Date]) IN (3,5) THEN 'Quantity'
ELSE 'Sales'
END

```

The calculation is valid.
3 Dependencies ▾
Apply
OK

- ☐ 2. Write a calculation called "Field Values". This calculation will establish the full Measure Value for each Field Name, fixed specifically to the level of detail of the intended visualization. Drag this field to Text, with an aggregation of MAX().

Field Values Superstore ✕

```

IF [Field Names] = 'Discount' THEN {FIXED [Category], [Region], [Ship Mode] : SUM([Discount])}
ELSEIF [Field Names] = 'Profit' THEN {FIXED [Category], [Region], [Ship Mode] : SUM([Profit])}
ELSEIF [Field Names] = 'Quantity' THEN {FIXED [Category], [Region], [Ship Mode] : SUM([Quantity])}
ELSEIF [Field Names] = 'Sales' THEN {FIXED [Category], [Region], [Ship Mode] : SUM([Sales])}
END

```

The calculation is valid.
2 Dependencies ▾
Apply
OK

- ☐ 3. Write a calculation called "Conditional Formatting". This calculation will leverage the previous two calculations to allow for different color results. Drag this field to Color.

Conditional Formatting Superstore ✕

```

IF ATTR([Ship Mode]) = 'Same Day'
OR ATTR([Ship Mode]) = 'Standard Class' THEN
    IF MAX([Field Values]) > 0 THEN 'Green'
    ELSEIF MAX([Field Values]) < 0 THEN 'Red'
    ELSE 'White'
    END
ELSE 'White'
END

```

The calculation is valid.
1 Dependency ▾
Apply
OK

3c - Jedi Challenge: Top Sales Reps

Filter to the Sales Reps who won top seller for any single year. Display their total Sales for all time. Display their total Sales for the year they were top seller. Display their total Sales for the year they were a top Rep as a % of the Top Rep Amount for a selected Benchmark Year.

- ☐ 1. Write a calculation to find the Total Sales amount of each Rep, for each Year.

Superstore ×

```
{ FIXED YEAR([Order Date]), [Sales Representative ID] : SUM([Sales]) }
```

The calculation is valid.

5 Dependencies ▼

Apply

OK

- ☐ 2. Write a calculation to find the Top Rep's Sales amount, for each Year.

Superstore ×

```
{ FIXED YEAR([Order Date]) : MAX([Annual Rep Sales]) }
```

The calculation is valid.

4 Dependencies ▼

Apply

OK

- ☐ 3. Write a calculation to isolate the Winning Amount for the winner for each Year.

Winning Amount

Superstore

```
{ FIXED [Sales Representative ID], YEAR([Order Date]) : IF MAX([Annual Rep Sales] = [Top Rep Annual Amount]) THEN MAX([Top Rep Annual Amount]) END }
```

The calculation is valid.

2 Dependencies ▾

Apply

OK

- ☐ 4. Write a calculation to filter to the Reps who's annual amount equals the Top Rep Annual Amount. Add this as a filter. You should now see five Reps in the view.

Top Annual Rep Filter

Superstore

```
{ FIXED [Sales Representative ID] : MAX([Annual Rep Sales] = [Top Rep Annual Amount]) }
```

The calculation is valid.

1 Dependency ▾

Apply

OK

- ☐ 5. Write a calculation to filter to the Benchmark Year of Sales.

BY - Sales

Superstore

```
IF YEAR([Order Date]) = [Benchmark Year (BY)] THEN [Sales] END
```

The calculation is valid.

3 Dependencies ▾

Apply

OK

- ☐ 6. Write a calculation to find the total amount of Sales for the Rep with the highest Sales in the Benchmark Year.

BY - Winner Sales Amount

Superstore

```
{ FIXED : MAX (
{ FIXED [Customer ID] : SUM([BY - Sales]))})}
```

The calculation is valid.

2 Dependencies ▾

Apply

OK

- ☐ 7. Write a calculation to find the ratio between the Winning Amount for the Sales Rep overall, and the Winning Amount of the Benchmark Year Winner.

Winner Comparison Rate

Superstore

```
MAX([Winning Amount])/MAX([BY - Winner Sales Amount])
```

The calculation is valid.

1 Dependency ▾

Apply

OK

- ☐ 8. Add the Winning Amount and the Winner Comparison Rate to the view.

