



A review of all formulas we have seen so far

Please refer the example excel sheet used in class.

Q1: What was the total budget for STEM education for NASA in FY2010?

Budget: 177.166589

Formula: =SUMIFS (Data! I : I, Data! C : C, "NASA")

Idea: The sentence total budget for STEM education indicates a summation, data regarding the FY2010 is available at Data! I : I, and the agency NASA needs to be searched under the Data! C : C column as a criteria.

Q2: What was the budget for STEM education for NASA in FY2010 where programs mention "K-12"?

Budget: 61.078115

Formula: =SUMIFS (Data! I : I, Data! C : C, "NASA", Data! E : E, "*K-12*")

Idea: The sentence total budget for STEM education indicates a summation, data regarding the FY2010 is available at Data! I : I, and the agency NASA needs to be searched under the Data! C : C column as a criteria and as a second criteria the program description available under column Data! E : E needs to contain the substring "*K-12*".

Q3: What percentage of the the budget (Q1 and Q2) was allocated to programs that had some focus on K-12?

%: 34.47%

Formula: =C9/C6

Idea: Find the percentage.

Q4: What percentage of the budget was allocated to NASA out of the overall budget dataset for FY2010?

%: 2.59%

Total (all): 6850.57305 NASA: 177.166589

Formula: =F16/F15



Idea: Find the percentage by dividing the NASA budget by the total budget.

Q5: Complete the following table:

Funding Levels (2010Value-2009Value)/2009Value

Formula: =SUMIFS (Data!G:G, Data!\$C:\$C, \$C20)

To lock or not to lock?

Leave G:G unlocked; this allows the column to shift as you drag the cell to the right (across a row).

You need to lock C, as you only want to search from the agency name under the agency column.

The power of locking the right indices:

You get to get a lot of data from fixing the right aspects of a single formula to get all the data you need.

Q6: Which agency had the largest growth in funding from FY2009 to FY2010?

Agency: Energy

Formula: =INDEX (C20 : C26, MATCH (MAX (H20 : H26), H20 : H26, 0))

Idea: Find the max growth using the MAX () function over the range H20 : H26, then use the MATCH function to locate the row on which this appears. Follow this by the INDEX function that prints the value in the column on that row.

Q7: What percentage of the budget of the agency in Q6 was "General STEM" (Column J)?

%: 16.65%

All: 60.7928 [Cell Location E33]
=SUMIFS (Data! I : I, Data! C : C, C29)

General STEM: 10.1236 [Cell Location E34]
=SUMIFS (Data! I : I, Data! C : C, C29, Data! J : J, "General STEM")

Formula: =E34/E33



Idea: Find the allocated funding only under General STEM to the energy agency and divide it by the total funding allocated to the energy agency.