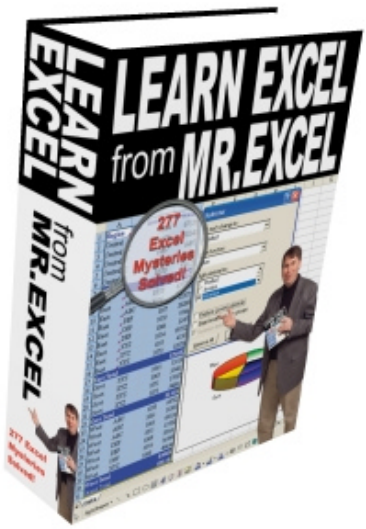

Free Preview – Week #5

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This Week: 4 Tips about Formulas.

Part II

CREATE EASIER-TO-UNDERSTAND FORMULAS WITH NAMED RANGES

Problem: As shown in Fig. 206, your worksheet contains several different formulas. It would be easier to understand the results if each component of every formula were named for what it represented and not just for the cell it came from.

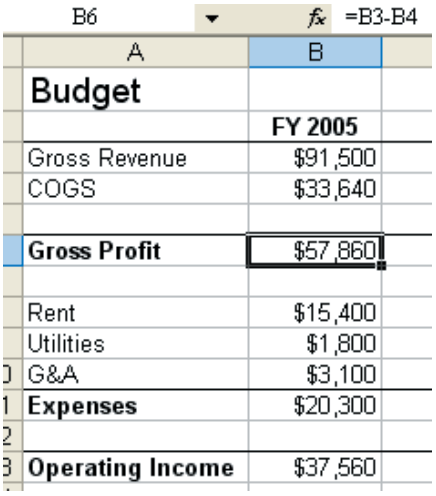

Fig. 206

Strategy: Use named ranges to make formulas easier to understand.

1) Give cell B3 a name of Revenue.

   Select cell B3. In the Name box (the area to the left of the formula bar), type Revenue and press Enter, as shown in Fig. 207.

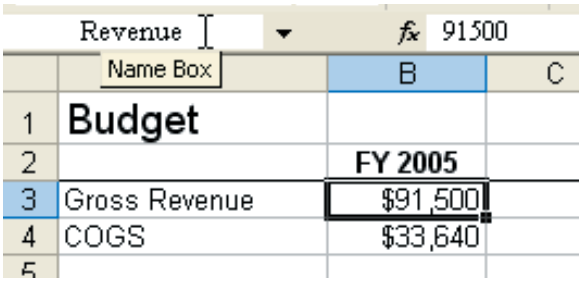

Fig. 207

2) Give cell B4 a name of COGS.

   Select cell B4. Click in the name box, type COGS and hit Enter.

3) Clear the formula in B6. Re-enter the formula and use the mouse to select the cells. Type an Equal sign. Using the mouse, touch B3. Type a Minus sign. Using the mouse, touch B4. This will enter the formula as =Revenue–COGS, as shown in Fig. 208. This is easier to understand than a typical formula.

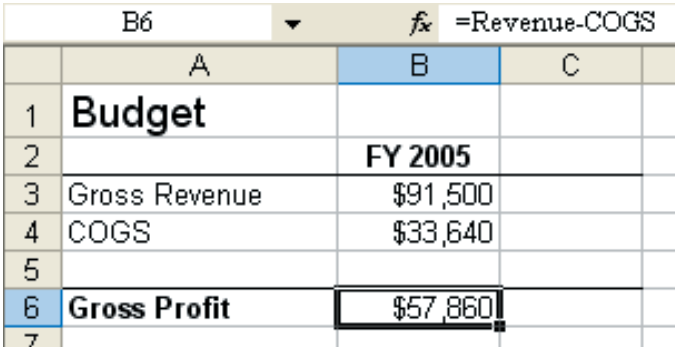

Fig. 208

Gotcha: You need a lot of foresight to use this technique. In order to have this work automatically, you are supposed to be smart enough to create the range names before you enter the formula. However, most people get the formula first and then decide to make the worksheet easier to understand.

1) If you want to assign names after the formulas are created, use Insert – Name – Apply to apply names to existing formulas, as shown in Fig. 209.

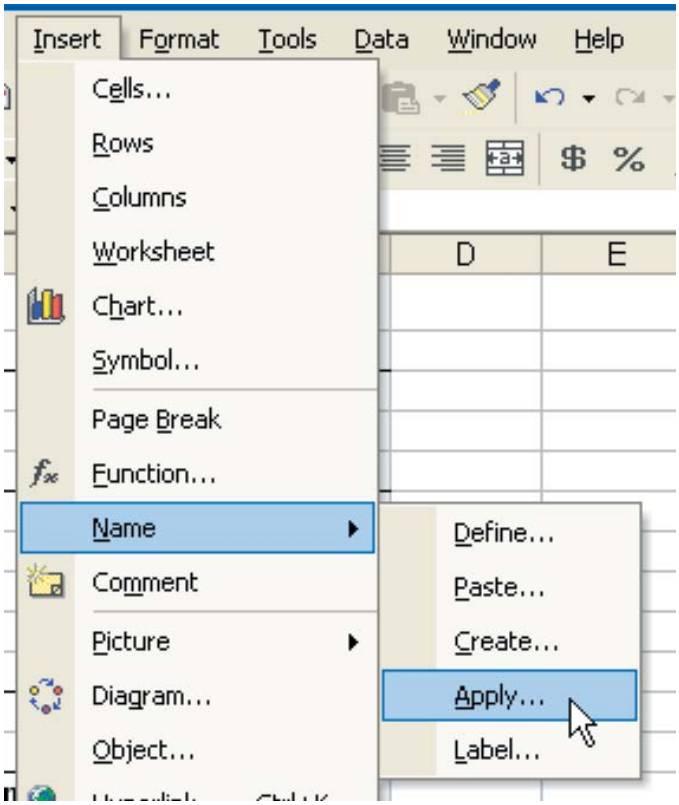

Fig. 209

2) As shown in Fig. 210, select all of the names that you want to apply.

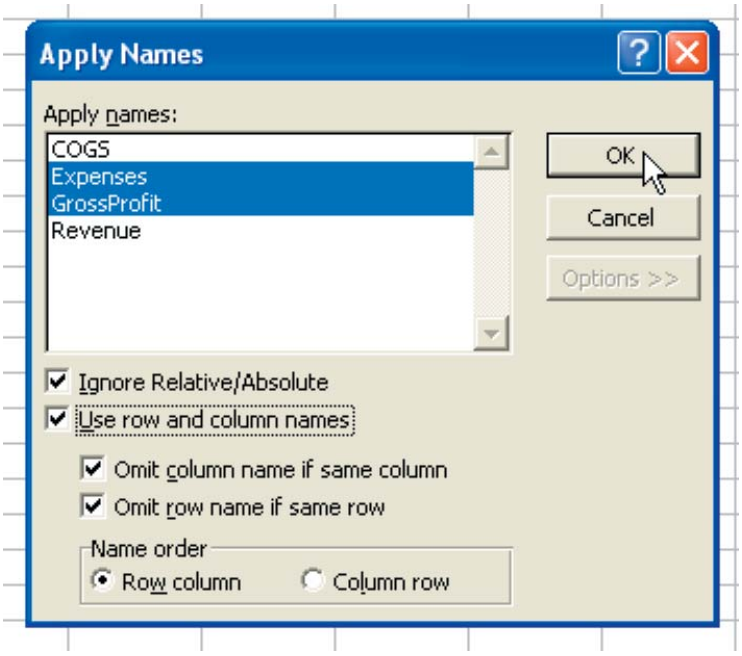

Fig. 210

Result: A formula like =B6–B11 will be updated to =GrossProfit–Expenses, as shown in Fig. 211.

B13 =GrossProfit-Expenses

	A	B	C	D
1	**Budget**			
2		**FY 2005**		
3	Gross Revenue	$91,500		
4	COGS	$33,640		
5				
6	**Gross Profit**	$57,860		
7				
8	Rent	$15,400		
9	Utilities	$1,800		
10	G&A	$3,100		
11	**Expenses**	$20,300		
12				
13	**Operating Income**	$37,560		

Fig. 211

Summary: To create plain language formulas, first assign a range name to each cell in your formula. Use the mouse when entering the formula. To assign range names to a formula after the fact, use Insert – Name – Apply.

Commands Discussed: Insert – Name – Apply

USE NAMED CONSTANTS TO STORE NUMBERS

Problem: You've seen how you can assign a name to a cell. It is also possible to assign a name to a constant. This could be useful if you have a number, such as a local sales tax rate, that changes once a year.

Strategy: From the menu, use Insert – Name – Define. Type a name like SalesTax. In the Refers to box, type =0.065 and click Add, as shown in Fig. 212.

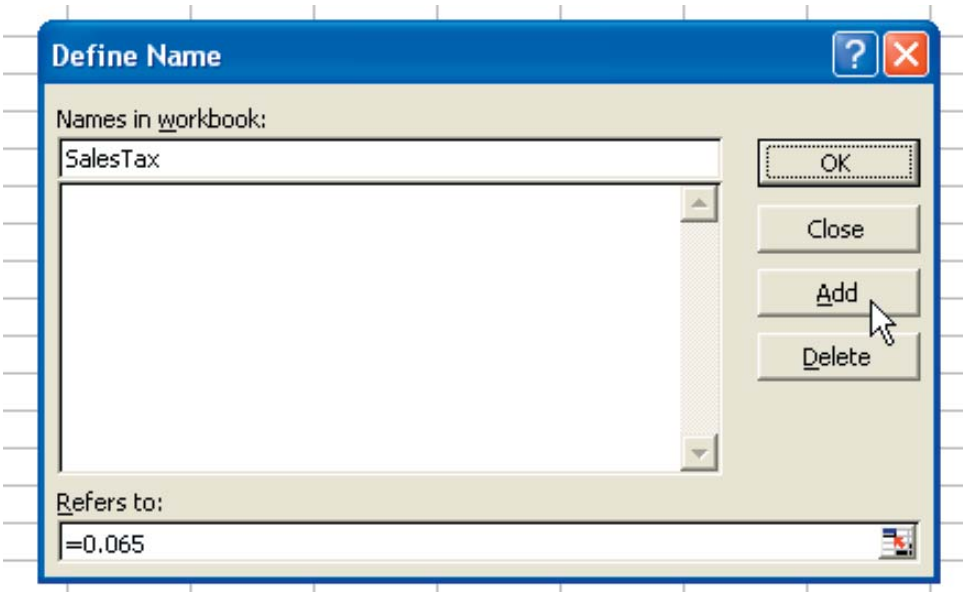

Fig. 212

In this workbook, you can now use a formula such as =SalesTax*D2, as shown in Fig. 213.

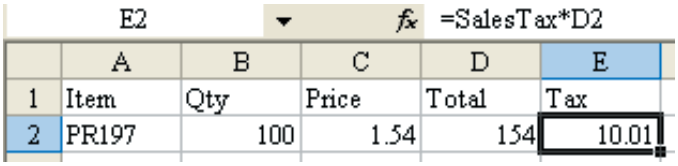

Fig. 213

If the tax rate changes later use Insert – Name – Define to change the constant assigned to the name.

Summary: To name a constant in a workbook use Insert – Name – Define, type in the name of the constant, and then define the constant in the Refers to: box.

Commands Discussed: Insert – Name – Define

BUILD A FORMULA USING LABELS INSTEAD OF CELL ADDRESSES

Problem: You hate using cell references such as B2 in formulas.

Strategy: Use natural language formulas. These formulas are fairly amazing. Excel has offered support for natural language formulas for many versions. With these formulas, you can use the headings in a worksheet to describe which cells you want to reference.

By default, natural language formulas are turned off in later versions of Excel. To enable them, go to Tools – Options – Calculation and select Accept Labels in Formulas, as shown in Fig. 214.

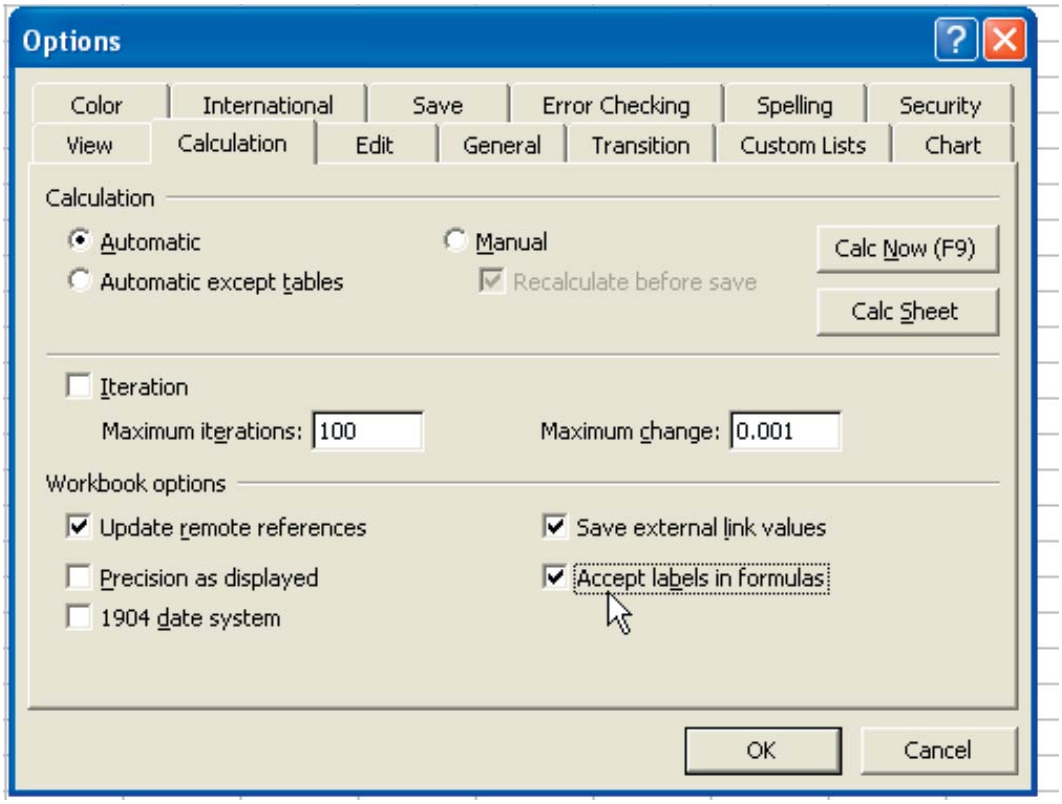

Fig. 214

As shown in Fig. 215, you can now enter formulas such as these: =SUM(East) and =SUM(ABC)

B6 =SUM(East)

	A	B	C	D
1		East	Central	West
2	ABC	304	691	740
3	DEF	871	714	715
4	GHI	272	945	844
5				
6		1447		

Fig. 215

It is important to note that there are no named ranges in this worksheet! Excel is simply looking at the labels in the first column and row of the spreadsheet.

To refer to sales of ABC in the West, you would enter =West ABC, or =ABC West, as shown in Fig. 216.

D6 fx =ABC West

	A	B	C	D
1		East	Central	West
2	ABC	304	691	740
3	DEF	871	714	715
4	GHI	272	945	844
5				
6		1447		740

Fig. 216

If you wanted to find the ratio of East ABC to West GHI, you would use this formula =ABC East/GHI West, as shown in Fig. 217.

fx =ABC East/GHI West

C	D	E
Central	West	
691	740	
714	715	
945	844	
36.0%	740	

Fig. 217

Additional Information: Amazingly, these formulas can even handle labels with space in them. As shown in Fig. 218, the formula of =ABC Gross Profit will work.

B6 =ABC Gross Profit

	A	B	C	D	E
1		Qty	Revenue	Cost	Gross Profit
2	ABC	100	150	67.5	82.5
3	DEF	150	337.5	151.875	185.625
4	GHI	200	400	180	220
5					
6		82.5			

Fig. 218

Also, if you've ignored all of my pleas to have headings take up only a single row of cells, and have a spreadsheet with "Gross" in E1 and "Profit" in E2, you can still use the formula =Gross Profit ABC, as shown in Fig. 219. Important: You must refer to the headings in the order that they appear from top to bottom.

C7 =Gross Profit ABC

	A	B	C	D	E
1					Gross
2		Qty	Revenue	Cost	Profit
3	ABC	100	150	67.5	82.5
4	DEF	150	337.5	151.875	185.625
5	GHI	200	400	180	220
6					
7			82.5		

Fig. 219

You can even figure out the Gross Profit on a Gross quantity, as shown in Fig. 220.

B7 =Gross Gross Profit

	A	B	C	D	E
1				Gross	
2		Price	Cost	Profit	
3	Unit	2	1	1	
4	Dozen	22	12	10	
5	Gross	242	144	98	
6					
7		98			

Fig. 220

Gotcha: If your data set is missing labels, Excel may have trouble calculating formulas that are in cells that are not adjacent to your dataset.

Summary: Natural Language Formulas present an alternative to typical formulas in Excel. They might be great for your boss' boss who can't quite get the hang of using cell references in Excel.

Commands Discussed: Tools – Options – Calculation

USE NATURAL LANGUAGE FORMULAS TO REFER TO THE CURRENT ROW

Problem: In the previous example, a natural language formula referred specifically to one cell by indicating a row name and a column name. It is also possible to have natural language formulas that refer to a specific column in the current row.

Strategy: As shown in Fig. 221, you have a census of employees and their benefit selections.

	A	B	C	D
1	Name	DOB	Age	Dependants
2	Bill	2/17/1965	39	4
3	Bob	3/5/1955	49	2
4	Barb	11/22/1952	52	2
5	Robert	5/27/1922	82	2

Fig. 221

The company buys life insurance for anyone under the age of 65. The rate for life insurance is $4 per dependent. As shown in Fig. 222, you can write a natural language formula in E2: =IF(Age<65,Dependants*4,0).

E2 =IF(Age<65,Dependants*4,0)

	A	B	C	D	E	F
1	Name	DOB	Age	Dependants	Life Ins Cost	
2	Bill	2/17/1965	39	4	16	
3	Bob	3/5/1955	49	2	8	
4	Barb	11/22/1952	52	2	8	
5	Robert	5/27/1922	82	2	0	

Fig. 222

As you copy this formula down the column, Excel will properly calculate the formulas based on the age and dependents in the current row.

Part II

Summary: Again, natural language formulas allow non-technical people to write formulas in plain language.