Business Percentages Tool

To show this tool, press the [OPT] key and select the "Percent & Int. Conv." option. The following keypad will appear:

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Show This Help View

Settings

This tool has five independent calculation aids to solve different kind of problems that are common in business and financial activities:

- Bill-Tip-Total-Split problems.
- Business Margins problems.
- Percent Change problems.
- Percent Total problems.
- Interest Conversion problems.

Each section solves the corresponding equation calculating a particular variable given the others.

TIP Calculations Section

The Tip Calculator section allows you solve the simple problem of share a restaurant tip and bill in a number of persons. The calculation uses the following equations:

Total = Bill · (1 + Tip% ÷ 100)
Tip = Total - Bill
Split = Total ÷ #P

Where:

Button	Button Actions
TIP%	Stores the Tip value as percent or calculates : **= 100 · TIP Amount / Bill Amount**
#P	Stores the number of persons that will share the Bill.
Bill Amount ($)	Stores the Bill amount or calculates : **= Total Amount - Bill Amount**
TIP Amount ($)	Stores the Tip amount or calculates the: **= Bill Amount · TIP% / 100**
Total Amount ($)	Stores the Total amount or calculates: **= Bill Amount + TIP Amount** or; **= Split Amount · #P** depending on the last key pressed.
Split Amount ($)	Stores the amount to pay by each person or calculates: **= Total Amount / #P**

To enter a value in any of the variables, type the value in the calculator and touch the corresponding button.

If any other key is pressed before one of the Blue keys, the displayed number is stored in the corresponding variable. Otherwise, the variable will be calculated and displayed.

Example: Tip Calculator

A dinner Bill is $576.25 and 11 persons will share it. What is the amount per person with 15% tip?.

Solution:

First, expand the RLM-12 Finance Center to show the "Options Selection Menu" and select the "Percent & Int. Conv." option. Then follow the next sequence:

Keystrokes	Description
Type"576.25" & Bill Amount ($)	Type the Bill amount and touch the "Bill($)" button to enter it.
Type"11" & #P	Type the number of persons amount and touch the "#P" button to enter it.
Type"15" & TIP%	Type the tip percent and touch the "TIP%" button to enter it.
Split Amount ($)	Recalls the calculated Split amount to the calculator's display. Result = **$60.24**

Suppose no one wants to pay the exact amount and the split is rounded to $60.00. What is the Tip% and the new Total ?

Keystrokes	Description
Type"60" & Split Amount ($)	Type the New Split amount and touch the "Split($)" button to enter it.
TIP%	Recalls the calculated tip percent to the calculator's display. Result = **$14.53%**
Total Amount ($)	Recalls the calculated Total amount to the calculator's display. Result = **$660.00**

Business Margins Calculations Section

The Business Margins section deals with the Cost-Price-Markup-Margin problem using the following equations:

(Margin %)   **Mrg. %P = 100 · (PRICE - COST) ÷ PRICE**
(Markup %)   **Mrg. %C = 100 · (PRICE - COST) ÷ COST**

Where:

Button	Button Actions
PRICE (*)	Stores the sale Price of the item or calculates: = COST · (1 + Mrg.%C ÷ 100) ; or = COST ÷ (1 - Mrg.%P ÷ 100)
COST (*)	Stores the Cost of the item or calculates: = PRICE ÷ (1 + Mrg.%C ÷ 100) ; or = PRICE · (1 - Mrg.%P ÷ 100)
Mrg %P	Stores or calculates the Margin percent over Price. = 100 · (PRICE - COST) ÷ PRICE
Mrg %C	Stores or calculates the Markup percent over Cost. = 100 · (PRICE - COST) ÷ COST
(*): The COST and PRICE calculation depends on the key pressed before. If the previous key was "Mrg.%P" the Margin equation is used. If the previous key was "Mrg.%C" then the Markup equation is used..	

To enter a value in any of the variables, type the value in the calculator and touch the corresponding button.

If any other key is pressed before one of the Blue keys, the displayed number is stored in the corresponding variable. Otherwise, the variable will be calculated and displayed.

Example: A standard markup of a store is 60%. they received a shipment of items costing $19.00 each. What should be the retail price for the items?.

Solution:
First, expand the RLM-12 Finance Center to show the "Options Selection Menu" and select the "Percent & Int. Conv." option. Then follow the next sequence:

Keystrokes	Description
Type"19" COST	Type the Cost amount and touch the "COST" button to enter it.
Type"60" Mrg %C	Type the markup and touch the "Mrg.%C" button to enter it.
PRICE	Calculates the retail Price amount. Result = **$30.40**

Example: An electronic store purchases TV sets for $225, with a discount of 4%. The TV sets are sold for $300. What is the margin ?.

Solution: Follow the next sequence:

Keystrokes	Description
Type"225" ENTER "4" % − COST	Type the Cost, apply the discount and touch the "COST" button to enter it. Result = **$216.00**
Type"225" PRICE	Type the Price and touch the "PRICE" button to enter it.
Mrg %P	Calculates the Margin percent. **Result = 28.00**
What is the margin as percent without the 4% discount?	
Type"225" COST	Type the Cost without discount and touch the "COST" button to enter it.
Mrg %P	Calculates the Margin percent. **Result = 25.00**

Percent Change Calculations Section

The Percent Change section allows you solve the simple New-Old-%CHG relation in a direct way. The calculation uses the following equation:

$$\%Change = 100 \cdot (New - Old) / Old$$

Where:

Button	Button Actions
Old	Stores the base number (Old) or calculates: = New ÷ (1 + %Change ÷ 100)
New	Stores the New value or calculates = Old • (1 + %Change ÷ 100)
%Change	Stores the change percentage value or calculates: = 100 • (New - Old) ÷ Old
If any other key is pressed before one of the Blue keys, the displayed number is stored in the corresponding variable. Otherwise, the variable will be calculated.	

Example: The total sales last year were $90,000. This year were $95,000. What was the growth?.

Solution: First, expand the RLM-12 Finance Center to show the "Options Selection Menu" and select the "Percent & Int. Conv." option. Then follow the next sequence:

Keystrokes	Description
Type"90000" Old	Type the Old value and touch the "Old" button to enter it.
Type"95000" New	Type the New value and touch the "New" button to enter it.
%Change	Calculates the Margin percent. **Result = 5.56%**

Percent Total Calculations Section

The Percent Total section allows you solve the simple Part-Total-% of Total relation in a direct way. The calculation uses the following equation:

$$\%Total = 100 \cdot Part \div Total$$

Where:

Button	Button Actions
Part	Stores the Part value or calculates: = Total · %Total ÷ 100
Total	Stores the Total value or calculates = 100 * Part ÷ %Total
%Total	Stores the Percent of Total value or calculates: = 100 · Part ÷ Total
If any other key is pressed before one of the Blue keys, the displayed number is stored in the corresponding variable. Otherwise, the variable will be calculated.	

Example: The total assets of a company are $67,584 and has an Inventory of $23,457. What percentage of the total assets is the inventory?.

Solution: First, expand the RLM-12 Finance Center to show the "Options Selection Menu" and select the "Percent & Int. Conv." option. Then follow the next sequence:

Keystrokes	Description
Type"23457" Part	Type the inventory value and touch the "Part" button to enter it.
Type"67584" Total	Type the total assets value and touch the "Total" button to enter it.
%Total	Calculates the %Total. **Result = 34.71%**

Interest Conversion Calculations Section

The Interest Conversion section allows you to convert between nominal and effective interest rates using either: Periodic compounding or Continuous compounding.

The equations used to perform the calculations are:

(Periodic) $\quad$ **%EFF = 100 · [(1 + %NOM ÷ NP ÷ 100)^{NP} - 1]**

(Continuous) $\quad$ **%EFF = 100 · (e$^{%NOM/100}$ - 1)**

Where:

Button	Button Actions
Per Con / Per Con	Select the Periodic or Continuos Compounding.
NP	Stores the number of compounding periods per year in the "Periodic" interest conversion mode.
%NOM	Stores or calculates the Nominal interest rate.
%EFF	Stores or calculates the Effective interest rate.
If any other key is pressed before one of the Blue keys, the displayed number is stored in the corresponding variable. Otherwise, the variable will be calculated.	

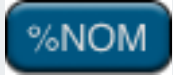**Example:** You have offers to open a saving account from three banks :
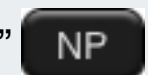
Bank #1: $\quad$ 6.70% annual interest compounded quarterly.
Bank #2: $\quad$ 6.65% annual interest compounded monthly.
Bank #3: $\quad$ 6.65% annual interest compounded continuously.

What is the best offer?.
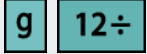
Solution: First, expand the RLM-12 Finance Center to show the "Options Selection Menu" and select the "Percent & Int. Conv." option. Then follow the next sequence:

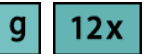| Keystrokes	Description
Per Con	Set the Periodic mode for Bank #1 & #2.
Type"6.7" %NOM	Type the Nominal interest of Bank #1 and touch the "%NOM" button to enter it.
Type"4" NP	Type the number of compounded periods per year of Bank #1 and touch the "NP" button to enter it.
%EFF	Calculates Bank #1 effective rate. **Result = 6.87%**
Type"6.65" %NOM	Type the Nominal interest of Bank #2 and touch the "%NOM" button to enter it.
Type"12" NP	Type the number of compounded periods per year of Bank #2 and touch the "NP" button to enter it.
%EFF	Calculates Bank #2 effective rate. **Result = 6.86%**
Per Con	Set the Continuous mode for Bank # 3.
Type"6.65" %NOM	Type the Nominal interest of Bank #3 and touch the "%NOM" button to enter it.
%EFF	Calculates Bank #3 effective rate. **Result = 6.88%**
The calculations show that bank #3 is offering the most favorable interest rate.	

Example: Balance of a Saving Account

Starting today, you make monthly deposits of $25 into an account paying 5% interest compounded daily (365-day basis). At the end of 7 years, how much will you receive from the account?.

Solution: Follow the next sequence:

Keystrokes	Description
Per Con	Set the Periodic mode.
Type"5" %NOM	Type the Nominal interest of the account and touch the "%NOM" button to enter it.
Type"365" NP	Type the number of compounded periods per year and touch the "NP" button to enter it.
%EFF	Calculates the effective rate. **Result = 5.13%**
Type"12" NP	Type the number of deposits per year and touch the "NP" button to enter it.
%NOM	Calculates equivalent nominal interest rate for monthly compounding. **Result = 5.01%**
g BEG	Set "BEG" mode.
g 12÷	Stores the %NOM ÷ 12 ino the "i" financial register.
Type"7" g 12x	Stores 7 · 12 into the "n" financial register.
Type"0" PV	Stores 0 into the "PV" financial register.
Type "25" CHS PMT	Stores -25 into the "PMT" financial registers
FV	Calculates the Value of the account in 7 years. **Result = 2,519.62**