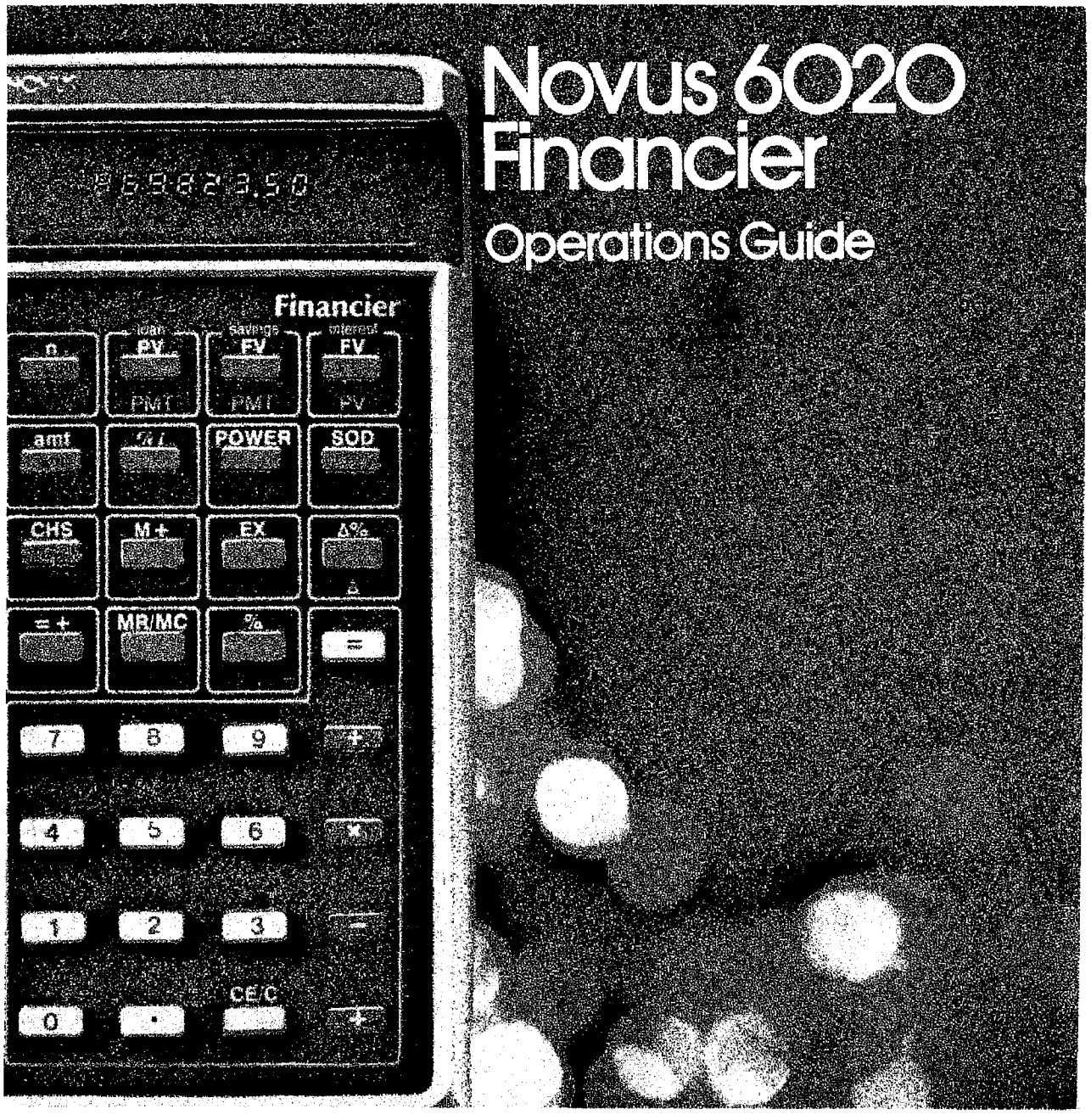


Novus 6020 Financier

Operations Guide

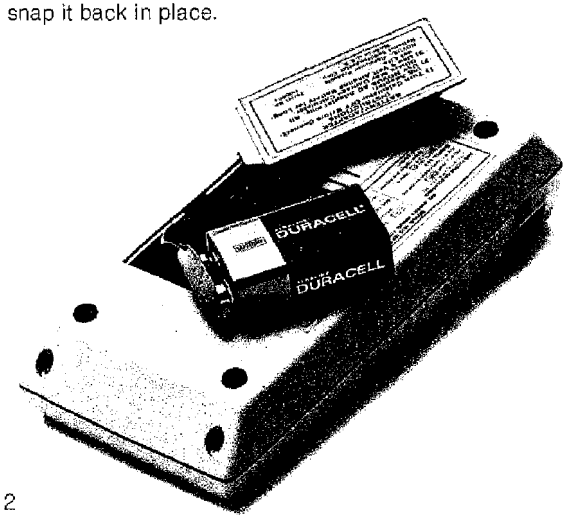
CONTENTS

Getting Started

Turn your Novus Financier on with the switch on the left side of the calculator. The calculator is automatically cleared and the display should now show 0. If it does not, check to see if the batteries are properly connected.

Battery Installation

Your Novus Financier is powered by a 9-volt transistor battery which should give you about two months of operation with normal use. The Financier will show a decimal point on the extreme left side of the display as a low-battery indicator. Although calculations can still be made while the low-battery indicator is on, the battery should be replaced as soon as possible. Continued use on a weak battery may result in inaccurate answers. To change batteries, turn the machine over, place a small coin in the slot at the top of the battery door and gently pull toward you. The battery door will slip out. BE SURE THE CALCULATOR IS TURNED OFF BEFORE REPLACING THE BATTERY. Slip the bottom of the battery door back in place and squeezing gently on the two prongs on the door, snap it back in place.



AC Adaptor

You can use your Financier on regular AC current by connecting the Novus AC adaptor to the jack at the top of the machine. BE SURE YOUR CALCULATOR IS TURNED OFF BEFORE CONNECTING THE ADAPTOR.

Operation

Display, Overflow and Error Indication

The Novus Financier will accept and display any positive or negative number between 0.0000001 and 99999999. Any result larger than 99999999 or smaller than -99999999 or any logic error (i.e. division by zero) will result in an error indicated by all zeros and all decimal points showing in the display. Touching [CE/C] will clear the error indication permitting further calculations.

Automatic Display Shutoff

To save battery life, the Novus Financier will shut off the display and show all decimal points if no key has been touched for approximately 25 seconds. No data has been changed and further entries or operations will bring back the display. To restore the display without changing its contents, touch [CHS] twice.

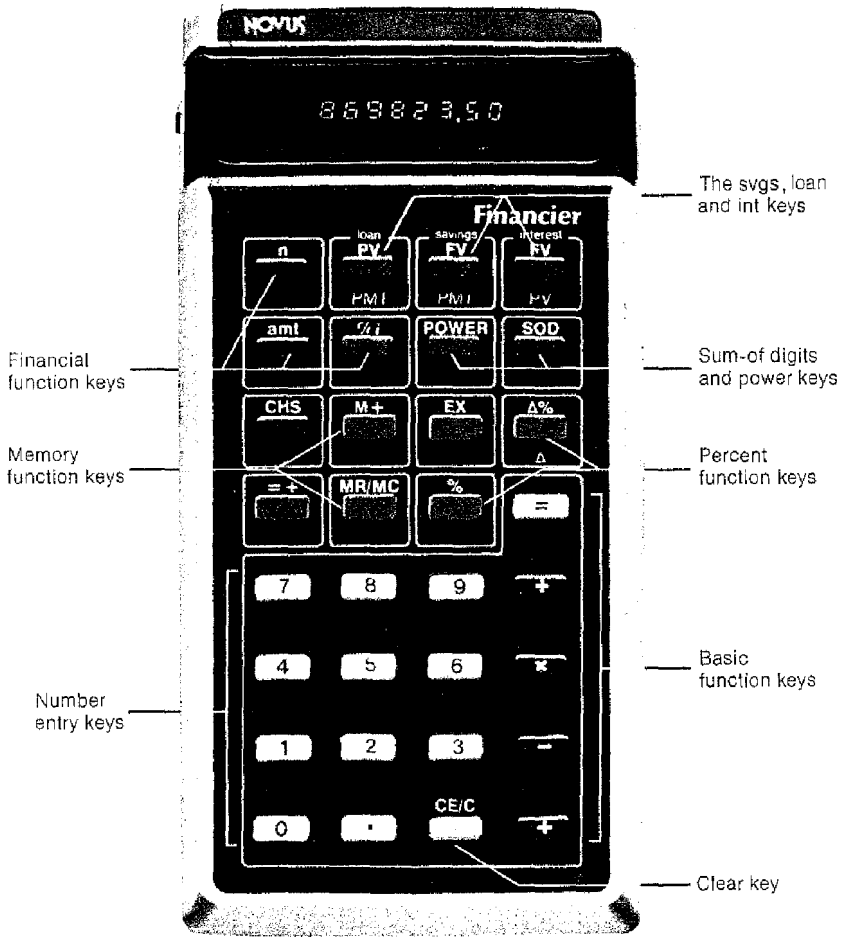
[EX] Exchanges the number in the display with the number last in the display.

[CE/C] Touched before a function key, one touch of [CE/C] clears the last number entry, and enables you to continue calculations; two touches of [CE/C] clears everything but memory. Touched after a function key, one touch of [CE/C] clears everything but memory.

[CHS] Changes the sign of number in the display.

Negative Numbers

To enter a negative number, key in the desired number and touch [CHS].


NOVUS
Financier
loan
savings
interest
n
PV
FV
FV
PMT
PMT
PV
amt
%i
POWER
SOD
CHS
M+
EX
Δ%
MR/MC
%
=
7
8
9
+
4
5
6
×
1
2
3
−
0
.
CE/C
+
The svgs, loan and int keys
Financial function keys
Sum-of digits and power keys
Memory function keys
Percent function keys
Basic function keys
Number entry keys
Clear key

Performing Calculations

For maximum calculating flexibility, your Novus Financier uses business logic for solving problems. Addition and subtraction is performed arithmetically, which simply means you don't need to use an Equals key to get an answer. The benefit to you is the ability to add or subtract the same number repeatedly by just touching the [+] or [−] key. You can make instant, trouble-free corrections of entry errors, and solve many problems in fewer keystrokes. This gives you a great advantage when working with long columns of figures. Because you get credit balances automatically, and automatic roundoff at two decimal places, your Financier is ideal for dollars-and-cents calculations.

Multiplication and division problems are performed algebraically. In other words, you do the problem exactly as you'd say it. This simplifies your approach to problems involving chain calculations, percentages and more complex equations.

So your Novus Financier gives you the optimum combination of logic systems. You can tackle each type of problem in the most efficient way. You get fast and easy answers because you can apply computation power normally found only in more expensive desk-top calculators.

Addition and Subtraction

The Novus Financier adds and subtracts the same way as the old familiar adding machine. The [+] key adds the last entry to whatever is already in the machine, and the [−] key subtracts the last entry. Example: 2 [+] 3 [+] displays 5. Touching [CE/C] to clear between addition problems, 7 [+] 3 [−] displays 4.

Repeat Add/Subtract

The Financier is in ADDITION mode whenever the last function touched is [+] or [−]. When the calculator is in the ADDITION mode, the last entry is set up for repeat operations.

Example: Add 5 + 2 + 2 + 2:

KEY IN	DISPLAY SHOWS	COMMENTS
5	5	
[+]	5.	
2	2	
[+]	7.	
[+]	9.	Automatic repeat addition.
[+]	11.	Automatic repeat addition.
[CE/C]	0	Clear between addition problems.

Example: Subtract 18 − 3 − 3 − 3:

KEY IN	DISPLAY SHOWS	COMMENTS
18	18	
[+]	18.	
3	3	
[−]	15.	
[−]	12.	Automatic repeat subtraction.
[−]	9.	Automatic repeat subtraction.
[CE/C]	0	Clear between subtraction problems.

Multiplication and Division

Multiplication and division problems are done algebraically, that is, you do the problem exactly as you'd say it.

Example: 5 [×] 4 [=] displays 20.
8 [÷] 4 [=] displays 2.
2 [×] 3 [×] 4 [÷] 6 [=] displays 4.

Constant Multiplication

The Financier is in CHAIN mode whenever the last function touched is [×] or [÷]. When CHAIN mode has been established with the [×] key, the calculator retains the first factor for constant multiplication:

Example: Multiply 3 × 4; 3 × 5 and 3 × (−6.21):

KEY IN	DISPLAY SHOWS	COMMENTS
3	3	
[×]	3.	Set CHAIN multiplication mode.
4	4	
[=]	12.	
5	5	
[=]	15.	Automatic first factor constant multiplication, constant is 3 ×.
6.21 [CHS]	-6.21	
[=]	−18.63	Automatic first factor constant multiplication, constant is 3 ×.

IMPORTANT NOTE ABOUT YOUR CALCULATOR →

Constant Division

When the CHAIN mode has been established with the [÷] key, the calculator retains the second factor for constant division.

Example: Divide 12 by 6; 20 by 6 and 1.8 by 6:

KEY IN	DISPLAY SHOWS	COMMENTS
12	12	
[÷]	12.	Set CHAIN division mode.
6	6	
[=]	2.	
20	20	
[=]	3.33	Automatic second factor constant division, constant is ÷ 6.
1.8	1.8	
[=]	.3	Automatic second factor constant division, constant is ÷ 6.

The [=] (equals key) is designed to automatically round off to two decimal places. In order to see results displayed with more than two decimal places, avoid use of the equals key. Instead, use either the [×] (times key) or the [÷] (divide key) at the point in the problem where an [=] depression would occur.

EXAMPLE

5.1234 [×] 10 [=] 51.234

Using [=]		Avoiding [=]	
Key In	Display	Key In	Display
5.1234	5.1234	5.1234	5.1234
[×]	5.1234	[×]	5.1234
10	10.	10	10.
[=]	51.23	[×] or [÷]	51.234
	↑ Rounded Off Answer		↑ All digits of answer are displayed

Remember to depress [CE/C] before beginning a new problem.

Memory

[M+] Adds the number in the display to the number in memory. To subtract the number in the display from memory, touch [CHS] then [M+].

[=+] Completes a CHAIN mode calculation and adds the result to memory. To subtract the result from memory, touch [CHS] [=+].

[MR/MC] One touch of [MR/MC] recalls the number in memory to the display. Two touches of [MR/MC] clears memory leaving the number that was in memory in the display for further calculations.

Example: Calculate the sum of products $(2 \times 3) + (4 \times 5)$.

KEY IN	DISPLAY SHOWS	COMMENTS
2	2	
[×]	2.	
3	3	
[=+]	6.	Result is displayed and added to memory.
4	4	
[×]	4.	
5	5	
[=+]	20.	Result is displayed and added to memory.
[MR/MC]	26.	Recall total from memory.
[MR/MC]	26.	Clear memory for next example.

Example: Bring the following invoices forward and find the grand total:

QUANTITY	DESCRIPTION	UNIT PRICE	NET PRICE
5	Item A	1.25	?
7	Item B	1.188	?
4	Item C	.31	?

KEY IN	DISPLAY SHOWS	COMMENTS
5	5	
[×]	5.	
1.25	1.25	
[=+]	6.25	Net price for item A. Total is added to memory.
7	7	
[×]	7.	
1.188	1.188	
[=+]	8.32	Automatic roundoff to two decimal places. Net price for item B. Total added to memory.
4	4	
[×]	4.	
.31	.31	
[=+]	1.24	Net price for item C. Total is added to memory.
[MR/MC]	15.81	Recall grand total from memory.
[MR/MC]	15.81	Clear memory.

Expense Proration

Example: What percent of the total expenses has each department incurred if the expenses are as follows:

DEPARTMENT	EXPENSES	% DISTRIBUTION
Advertising	$305.00	?
Training	200.00	?
Printing	115.50	?
Utilities	86.75	?
Total Expenses:	?	100%

KEY IN	DISPLAY SHOWS	COMMENTS
[CE/C]	0	
305	305	Advertising expense.
[+]	305.	
200	200	Training expense.

[+]	505.	
115.5	115.5	Printing expense.
[+]	620.5	
86.75	86.75	Utilities expense.
[+]	707.25	Total Expenses
[÷]	707.25	Calculate 100 ÷ total expenses.
100	100	
[EX]	707.25	
[×]	.14139271	Set for constant multiplication.
305	305	Advertising expense.
[=+]	43.12	% distribution for advertising.
200	200	Training expense.
[=+]	28.28	% distribution for training.
115.5	115.5	Printing expense.
[=+]	16.33	% distribution for printing.
86.75	86.75	Utilities expense.
[=+]	12.27	% distribution for utilities.
[MR/MC]	100.	Recall memory to prove out percentages to 100%.
[MR/MC]	100.	

Expense Distribution

Example: Allocate an additional $550 overhead to various departments based on their percentage of total costs if their costs are as follows:

DEPARTMENT	COSTS	ADD'L OVERHEAD
Calculators	$5000.00	?
Appliances	585.00	?
Ladies wear	2250.00	?
Stationery	1575.00	?
Total costs:	?	$550.00

KEY IN	DISPLAY SHOWS	COMMENTS
[CE/C]	0	
5000	5000	Costs for calculators.
[+]	5000.	
585	585	Costs for appliances.
[+]	5585.	
2250	2250	Costs for ladies wear.
[+]	7835.	
1575	1575	Costs for stationery.
[+]	9410.	Total costs.
[÷]	9410.	
550	550	Additional overhead.
[EX]	9410.	Calculate overhead ÷ costs.
[×]	.05844845	Set for constant multiplication.
5000	5000	Costs for calculators.
[=+]	292.24	Additional overhead for calculators.
585	585	Costs for appliances.
[=+]	34.19	Additional overhead for appliances.
2250	2250	Costs for ladies wear.
[=+]	131.51	Additional overhead for ladies wear.
1575	1575	Costs for stationery.
[=+]	92.06	Additional overhead for stationery.
[MR/MC]	550.	Recall memory to prove out additional overhead = $550.
[MR/MC]	550.	Clear memory.

Depreciation by Declining Balance

Example: A $10,000 truck that has a 5-year life expectancy is to be depreciated at an accelerated rate of 200% of the declining balance (double declining balance). Determine the depreciation for each year, the new book value after each year and the final value.

KEY IN	DISPLAY SHOWS	COMMENTS
10000	10000	Original book value.
M+	10000.	Save in memory for future use.
200	200	Depreciation percentage.
÷	200.	
5	5	Life expectancy of truck.
÷	40.	
100	100	Constant.
CHS	-100	
×	-.4	Set for constant multiplication.
MR/MC	10000	Recall original book value.
=+	-4000.	First year depreciation.
MR/MC	6000.	Book value after one year.
=+	-2400.	Second year depreciation.
MR/MC	3600.	Book value after two years.
=+	-1440.	Third year depreciation.
MR/MC	2160.	Book value after three years.
=+	-864	Fourth year depreciation.
MR/MC	1296.	Book value after four years.
=+	-518.4	Fifth year depreciation.
MR/MC	777.6	Final book value.

Percentage Calculations

Your Financier has a true 'live' percent key enabling you to do percentages, 'add-on' calculations and variable percentage problems.

Note: Since your Financier allows for variable percentage problems, it is advisable to clear the machine with two touches of CE/C between percentage problems.

Example: What is 25% of 153?

KEY IN	DISPLAY SHOWS
153	153
×	153.
25	25
%	38.25

Add-On Calculations

Example: If you buy merchandise at a wholesale price of $725 and there was a tax of 33%, how much would you pay for the merchandise?

KEY IN	DISPLAY SHOWS	COMMENTS
725	725	Wholesale price.
×	725.	
33	33	
%	239.25	Amount of tax.
+	964.25	Net cost of merchandise.

Example: How much would you pay for merchandise costing $475 if you got a 17% discount and there was 6% sales tax?

KEY IN	DISPLAY SHOWS	COMMENTS
475	475	Cost of merchandise.
⊠	475.	
17	17	
%	80.75	Amount of discount.
−	394.25	Net before tax.
⊠	394.25	
6	6	
%	23.66	Amount of tax.
+	417.91	Net price.

Example: If you bought merchandise at a wholesale price of $700 and wanted to add a 30% mark-up for retail, how much would you sell the merchandise for?

Using the formula:

$$\text{Retail price} = \frac{\text{Wholesale price}}{100 - \%\ \text{mark-up}}:$$

KEY IN	DISPLAY SHOWS	COMMENTS
700	700	Wholesale cost.
÷	700.	
100	100	
+	100.	
30	30	% mark-up.
−	70.	
%	1000.	Retail price.

Variable Percentage Calculations

Example: If you have goods selling for $3455 and give vendor A 21% off, vendor B 15% off and vendor C 17% off, how much discount are you giving each vendor and what is their net cost?

KEY IN	DISPLAY SHOWS	COMMENTS
3455	3455	Cost of goods.
⊠	3455.	
21	21	
%	725.55	Discount to vendor A.
−	2729.45	Net to vendor A.
15	15	
%	518.25	Discount to vendor B.
−	2936.75	Net to vendor B.
17	17	
%	587.35	Discount to vendor C.
−	2867.65	Net to vendor C.

Power and Root Calculations

Powers are calculated by using the [PWR] key in conjunction with the [×] key. Example: $2^5 = 32$:
2 [×] 5 [PWR] displays 32

Roots are calculated by using the [PWR] key in conjunction with the [÷] key. Example: $\sqrt[5]{32} = 2$:
32 [÷] 5 [PWR] displays 2.

Example: What annual rate of interest must be obtained to allow a $6500 investment to grow to $11,000 in 9 years? Using the formula: $FV = PV(1 + i)^n$ and solving for i:

$$i = (\sqrt[n]{FV/PV}) - 1.$$

KEY IN	DISPLAY SHOWS	COMMENTS
11000	11000	Future value.
[÷]	11000.	
6500	6500	Present value.
[÷]	1.6923076	Set up to take 9th root.
9	9	Number of periods.
[PWR]	1.0602	
[+]	1.0602	
1	1	
[−]	.0602	Annual interest rate (6.02%).

Financial Calculations

In conjunction with the following three keys, your Novus Financier will perform single-key functions most needed by professionals in business and finance.

[AMT] To enter amounts.

[n] To enter numbers of periods. Touching [n] assumes unit periods. Touching [CHS] [n] assumes periods × 12 (months).

To enter percentage interest per period. Touching [%i] assumes % interest per period. Touching [CHS] [%i] assumes % interest per period ÷ 12 (months).

[AMT] [n] and [%i] can be entered in any sequence.

Amount and Percentage Change Calculations

[Δ%Δ] To compute amount and percentage change. Percentage change is displayed, amount of change is stored in a special memory. To display amount of change after percentage change has been calculated, touch [EX].

Example: If a house was purchased for $49,750.00, what is the percentage and amount of change if:
A) It now sells for $56,500;
B) It now sells for $30,000?

A)

KEY IN	DISPLAY SHOWS	COMMENTS
56500	56500	Current value.
[AMT]	56500.	Enter amount.
49750	49750	Purchase price.
[Δ%Δ]	13.57	% change in price (increase).
[EX]	6750.	Amount of change (increase).

B)

30000	30000	Current value.
AMT	30000.	
49750	49750	Purchase price.
△%△	-39.7	% change in price (decrease).
EX	-19750	Amount of change (decrease).

Example: If you buy goods for $8,000 and sell them for $12,000, what is the percentage and amount of your net profit?

KEY IN	DISPLAY SHOWS	COMMENTS
12000	12000	Gross profit.
AMT	12000.	Enter amount.
8000	8000	Cost of goods.
△%△	50.	Percentage profit.
EX	4000.	Net profit.

Sum-of-Digits Depreciation

SOD — Computes sum-of-digits depreciation and book value given the amount to be depreciated and number of periods of depreciation. Depreciation is displayed, book value is stored in a special memory. To display book value after depreciation has been calculated, touch EX.

Example: Find the depreciation and book value for each year on an item with an initial cost of $3500 and a salvage value at the end of eight years of $675.

KEY IN	DISPLAY SHOWS	COMMENTS
3500	3500	Initial cost.
+	3500.	
675	675	Salvage value.
−	2825.	Amount to be depreciated.
8	8	Number of periods (in years).
n	8.	
SOD	627.78	First year depreciation.
EX	2197.22	Book value after one year.
SOD	549.31	Second year depreciation.
EX	1647.91	Book value after two years.
SOD	470.83	Third year depreciation.
EX	1177.08	Book value after three years.
SOD	392.36	Fourth year depreciation.
EX	784.72	Book value after four years.
SOD	313.89	Fifth year depreciation.
EX	470.83	Book value after five years.
SOD	235.42	Sixth year depreciation.
EX	235.41	Book value after six years.
SOD	156.94	Seventh year depreciation.
EX	78.47	Book value after seven years.
SOD	78.47	Eighth year depreciation.
EX	0.	Asset has been fully depreciated.

Discounted Notes and Loan Rebates

Example: Discounted note and loan rebate using the rule of 78's. A businessman has taken a note for $20,000 at an annual percentage rate of 11% to be repaid in eight months. If the interest is discounted (taken in advance), what is the discount amount, the proceeds of the loan and effective annual yield?

KEY IN	DISPLAY SHOWS	COMMENTS
MR/MC	0.	Clear memory.
20000	20000	Amount of loan.
M+	20000.	Add to memory.

[×]	20000.	
8	8	Number of months.
[÷]	160000.	Interest is computed on a monthly basis.
12	12	
[×]	13333.333	
11	11	Annual percentage rate.
[%]	1466.67	Amount of discount.
[÷]	1466.67	Set up to yield effective annual yield.
[CHS]	-1466.67	
[M+]	-1466.67	Subtract from amount of loan in memory to get amount of proceed.
[MR/MC]	18533.33	Amount of proceed.
[%]	7.91	Effective annual yield.

If the loan were repaid after three months, what is the amount of interest accrued on the loan and the amount of rebate using the rule of 78's?

KEY IN	DISPLAY SHOWS	COMMENTS
[CE/C]	0	
8	8	Number of months of loan.
[n]	8.	
1466.67	1466.67	Discount amount.
[÷]	1466.67	
[SOD]	325.93	Interest accrued during first month.
[EX]	1140.74	Remaining interest.
[SOD]	285.19	Interest accrued during second month.
[EX]	855.55	Remaining interest.
[SOD]	244.44	Interest accrued during third month.
[EX]	611.11	Remaining interest (amount of rebate).

Present Value and Payment on Loans

Present Value of Annuity

With [AMT], [%i] and [n] entered, touching loan computes the amount that can be loaned (present value, loan PV) if a periodic payment [AMT] is made over a number of periods [n] at an interest rate [%i] per period.

Example: How much can you borrow from a bank that charges 9% interest compounded monthly if you can afford to pay:

A) $125 per month for three years?
B) $125 per month for four years?
C) $120 per month for four years?

A)

KEY IN	DISPLAY SHOWS	COMMENTS
9	9	Annual percentage rate.
[CHS]	-9	Compute and store monthly interest rate.
[%i]	.0075	
3	3	Number of years.
[CHS]	-3	Compute and store number of months.
[n]	36.	
125	125	Payment per month.
[AMT]	125.	
[loan]	3930.85	Amount that can be borrowed.

B)

4	4	New number of periods.
[CHS]	-4	
[n]	48.	
[loan]	5023.1	Amount that can be borrowed.

C)

120	120	
[AMT]	120.	New payment per month.
[loan]	4822.17	Amount that can be borrowed.

Example: A woman has just received an inheritance. Under the terms of the will, she has two choices: 1. She can receive payments of $2000 a year for 20 years. 2. She can receive a lump sum of $21,000 now. Assuming that money is worth 8% annually, which alternative should the woman choose?

KEY IN	DISPLAY SHOWS	COMMENTS
2000	2000	Payment per year.
AMT	2000.	
8	8	
%i	.08	Interest per period (in years).
20	20	
n	20.	Number of periods (in years).
loan	19636.3	Present value of annuity.
−	−19636.3	
21000	21000	Lump sum payment.
+	1363.7	Difference between two choices.

Clearly, alternative 2 is the best choice.

Payments on Loans

With AMT, %i and n entered, touching CHS loan computes the periodic payment (loan PMT) required to support a loan of AMT at an interest rate per period %i over a number of periods n.

Example: If you borrow $5250 to be repaid in 10 equal monthly installments from a bank charging an annual interest rate of 11.5% compounded monthly, how much are your monthly payments?

KEY IN	DISPLAY SHOWS	COMMENTS
5250	5250	Amount of loan.
AMT	5250.	
10	10	Number of periods.
n	10.	
11.5	11.5	Annual percentage rate.
CHS	−11.5	} Compute and store monthly interest rate.
%i	.00958333	
CHS loan	553.07	Monthly payment.

Example: A $5000 loan is to be repaid in equal monthly installments over five years. How much is each payment if:

A) The annual percentage rate is 18%?
B) The annual percentage rate is 12%?

A)

KEY IN	DISPLAY SHOWS	COMMENTS
18	18	Annual percentage rate.
CHS	−18	} Compute and store monthly interest rate.
%i	.015	
5	5	Number of years.
CHS	−5	} Compute and store number of months.
n	60.	
5000	5000	Amount of loan.
AMT	5000.	
CHS loan	126.97	Monthly payment.

B)

12	12	New annual percentage rate.
CHS	−12	
%i	.01	
CHS loan	111.22	Monthly payment.

Future Value and Payment on Savings

Future Value of Savings

With [AMT], [%i] and [n] entered, touching [svgs] computes the amount of future value (svgs FV) if [AMT] is deposited periodically for [n] periods at an interest rate per period [%i].

Example: If $100 is deposited into a savings account each month and the interest paid is compounded monthly, how much is the account worth after:

A) Six years at 7.5% annual percentage rate?
B) Nine years at 4.75% annual percentage rate?

A)

KEY IN	DISPLAY SHOWS	COMMENTS
7.5	7.5	Annual percentage rate.
[CHS]	−7.5	Compute and store monthly interest rate.
[%i]	.00625	
6	6	Number of years.
[CHS]	−6	Compute and store number of months.
[n]	72.	
100	100	Monthly payment.
[AMT]	100.	
[svgs]	9057.88	Future value of account.

B)

9	9	New number of years.
[CHS]	−9	
[n]	108.	
4.75	4.75	New annual percentage rate.
[CHS]	−4.75	
[%i]	.00395833	
[svgs]	13443.17	Future value of account.

Payment on Savings

With [AMT], [%i] and [n] entered, touching [CHS] [svgs] computes the periodic amount to be deposited in a savings account (svgs PMT) for [n] periods at an interest rate [%i] to accumulate the desired amount [AMT].

Example: A savings account is paying 5.5% per year. How much must be deposited periodically to grow to $15,000 in five years if:

A) Money is deposited and compounded monthly?
B) Money is deposited and compounded quarterly?

A)

KEY IN	DISPLAY SHOWS	COMMENTS
5.5	5.5	Annual percentage rate.
[CHS]	−5.5	Compute and store monthly interest rate.
[%i]	.00458333	
[5]	5	Number of years.
[CHS]	−5	Compute and store number of months.
[n]	60.	
15000	15000	Desired future value of account.
[AMT]	15000.	
[CHS] [svgs]	217.77	Monthly payment.

B)

5.5	5.5	Annual percentage rate.
÷	5.5	
4	4	Number of quarters.
=	1.38	Quarterly interest rate.
%i	.0138	
5	5	Number of years.
×	5.	
4	4	
=	20.	Number of quarters.
n	20.	
15000	15000	Desired future value of account.
AMT	150000.	
CHS svgs	656.39	Quarterly payment.

Compound Interest Calculations

Future Value with Compound Interest

With AMT, %i and n entered, touching int computes the future value (int FV) of an amount AMT deposited now, compounded over n periods at an interest rate per period %i .

Example: Find the future value of a savings account on which interest is compounded monthly if you left:

A) $2500 in the account for nine years at 5.25%.
B) $3000 in the account for nine years at 5.25%.
C) $3000 in the account for ten years at 5%.

A)

KEY IN	DISPLAY SHOWS	COMMENTS
9	9	Number of years.
CHS	−9	Compute and store number of months.
n	108	
5.25	5.25	Annual percentage rate.
CHS	−5.25	Compute and store monthly percentage rate.
%i	.004375	
2500	2500	Amount deposited.
AMT	2500.	
int	4005.87	Future value.

B)

3000	3000	New amount deposited.
AMT	3000.	
int	4807.04	Future value.

C)

5	5	New annual interest rate.
CHS	−5	
%i	.00416666	
10	10	New number of years.
CHS	−10	
n	120	
int	4941.02	Future value.

Present Value with Compound Interest

With [AMT], [%i] and [n] entered, touching [CHS] [int] computes the present value (int PV), the amount necessary today, to accumulate the future amount [AMT] if the present value is compounded over [n] periods at an interest rate per period [%i].

Example: A bank pays 4.5% per year compounded monthly. Find the amount that must be deposited now to grow to:

A) $5,000 after seven years.
B) $10,000 after seven years.
C) $10,000 after seven and one-half years.

A)

KEY IN	DISPLAY SHOWS	COMMENTS
7	7	Number of years.
[CHS]	−7	Compute and store number of months.
[n]	84	
4.5	4.5	Annual percentage rate.
[CHS]	−4.5	Compute and store monthly percentage rate.
[%i]	.00375	
5000	5000	Desired future value.
[AMT]	5000.	
[CHS] [int]	3651.1	Present value (amount to be deposited).

B)

10000	10000	New desired future value.
[AMT]	10000.	
[CHS] [int]	7302.19	Present value (amount to be deposited).

C)

7.5	7.5	New annual percentage rate.
[CHS]	−7.5	
[%i]	.00625	
[CHS] [int]	5925.23	Present value (amount to be deposited).

Financial Equations Used

Your Financier uses the following equations for single-key financial calculations.

With [n], [amt], and [%i] entered:

Touching [loan] computes the present value of an annuity using the equation:

$$PV = \frac{1 - (1 + i)^{-n}}{i} \times amt$$

Touching [CHS] [loan] computes the payment to a loan using the equation:

$$Payment = \frac{i}{1 - (1 + i)^{-n}} \times amt$$

Touching [svgs] computes the future value of an annuity using the equation:

$$FV = \frac{(1 + i)^{n} - 1}{i} \times amt$$

Touching [CHS] [svgs] computes a sinking fund deposit using the equation:

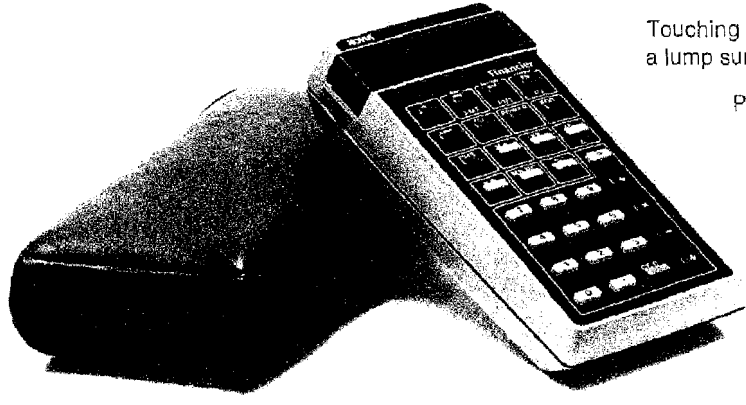
$$Payment = amt \times \frac{i}{(1 + i)^{n} - 1}$$

Touching [int] computes the future value of a lump sum using the equation:

$$FV = amt \times (1 + i)^{n}$$

Touching [CHS] [int] computes the present value of a lump sum using the equation:

$$PV = \frac{amt}{(1 + i)^{n}}$$



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- 100 step programming capability

6010 • NOVUS International Computer
The Electronic Measurement Converter
- More than 65 international measurement conversions
- Fully addressable, accumulating memory
- Total calculating capability with live percent

6025 • NOVUS Financier P.R.
The Programmable Electronic Financial Calculator
- Same features as 6020
- 100 step programming capability

6030 • NOVUS Statistician
The Electronic Statistical Calculator
- Dedicated to solving statistical calculations
- Pre-programmed statistical equations
- Fully addressable, accumulating memory

6035 • NOVUS Statistician P.R.
The Programmable Statistical Calculator
- Same features as 6030
- 100 step programming capability

For further information see your dealer or write:
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Consumer Warranty

NOVUS Model 6020

NOVUS, the consumer products division of National Semiconductor Corporation, is proud to guarantee your electronic calculator to be free from defects in workmanship and materials for a period of one year from the date of your purchase. Defects caused by abuse, accidents, modifications, negligence, misuse or other causes beyond the control of NOVUS are, of course, not covered by this warranty, nor are batteries. Should the calculator prove defective within 30 days of purchase, NOVUS will repair or, at its discretion, replace it free of charge. If the defect occurs after 30 days from date of purchase, a charge of $3.50 will be made for handling and insurance. If your calculator becomes defective after the one-year period, NOVUS will make repairs for a nominal charge of $17.50. Simply mail it prepaid and insured with your check or money order to the nearest NOVUS service center. Repair prices are subject to change without notice. Please do not send or include cash. Make your check or money order payable to NOVUS. Upon receipt, your calculator will be promptly serviced and returned to you freight prepaid.

Consumer Warranty Registration Certificate

Please put your warranty into effect by completing this form and mailing it within 10 days from date of purchase to the NOVUS service center in your area.

Model Number 6020

Serial Number_____

Purchase Date_____
(month/day/year)

Purchased from_____

Address_____

City, State, Zip_____

Your Name_____

Your Address_____

City, State, Zip_____

Optional Information

Was this calculator purchased for:
- ☐ Gift ☐ Personal use

What is your occupation?
- ☐ Student or Teacher ☐ Professional
- ☐ Executive ☐ Financial or Commercial
- ☐ Engineering or Scientific ☐ Statistical fields
- ☐ Other occupation_____

What is your age group?
- ☐ Under 18 ☐ 18-34 ☐ 35-49 ☐ 50-over

Where will you most use your NOVUS calculator?
- ☐ At home ☐ At school ☐ At work
- ☐ During travel

Where did you learn about the NOVUS calculators?
- ☐ Magazine ☐ Newspaper ☐ Television
- ☐ Radio ☐ Mail ☐ Store salesman
- ☐ Friend
- ☐ Other_____

What most attracted you to your NOVUS calculator?
- ☐ Appearance ☐ Size ☐ Reputation
- ☐ Price ☐ Features and capabilities.

Warranty Information
For Your Records

NOVUS Warranty Certificate
Please retain for your records. See insert for trouble-shooting tips and product service locations.

Model Number_____

Serial Number_____

Purchased from_____

Date purchased_____

NOVUS

Consumer Products from National Semiconductor