

Calculator Application Summary Calculator Appl



DESK-TOP INVESTMENT ANALYSIS

Hewlett-Packard now offers investment analysis in a compact and powerful desk-top calculator at an affordable price.

The HP 9815A combines many features of a much larger computer-calculator with those of a small calculator to arrive at this unique combination of price/performance.

Whether your problems are in stocks, bonds, options, commodities, real estate, or any other decision involving investing, the Investment Analysis software combined with the 9815 can help you explore more alternatives faster . . . right at your desk.

THE REVOLUTIONARY NEW HP 9815A

Don't let the size of this calculator fool you. As small as the 9815 is, it can do some amazing things. For instance, it provides a key-to-tape data entry system with error checking. The 9815 is programmable in the same easy-to-use language as the HP 65 and has a capacity of up to 2008 steps. With the built-in tape cartridge capable of storing programs or data, the 9815 has the flexibility and capacity to reduce most big problems to easily managed small ones.

The 9815 has a built-in printer for permanent records plus the ability to output on our HP 9871A Printer/Plotter or HP 9862A Plotter.

AVAILABLE PROGRAMS

Hewlett-Packard maintains an extensive library of programs for the 9815. To give you some idea of the versatility of this calculator, here is a sample list of available software related to investment analysis:

- Cash Flow Analysis
- Equity Yield Analysis
- Internal Rate of Return
- Modified Rate of Return
- Loan Schedules
- Basic Statistics for 1 Variable
- Basic Statistics for 2-5 Variables
- Permutations and Combinations
- Random Number Generator
- Normal Distribution
- Depreciation Schedules
- Pro Forma Income Statement
- N i Pmt PV FV
- Pie Chart
- Bar Graph
- Histogram

Projections for

- $y = a + bx$
- $y = a + bx + cx^2$
- $y = ax^b$
- $y = ae^{bx}$
- $y = a + b(\ln x)$
- $y = a + b(1/x)$
- $1/y = a + bx$

- Analysis of Variance
- Multiple Linear Regression
- Nonparametric Statistics

RATE OF RETURN

The Rate of Return program calculates an internal rate of return for an investment with up to 100 cash flows. For maximum flexibility, you may select the initial starting rate of interest.

Modified Rate of Return is also calculated. You may select any range of reinvestment rates desired plus the rate of change for that range.

Added investments may be discounted to affect the initial investment at a specified rate or at the reinvestment rate. Changes may be made to any cash flow amount. The 9871 Printer is optional. If it is used, a plot of interest vs. net present value can be obtained showing internal rate of return.

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=====
SELECT PROGRAM.

****

LOAN
AMORTIZATION

PLACE OVERLAY
#3 ON KEYS A-O.

=====

INPUT DATA

AMOUNT=100000.00
RATE= 11.250%
TERM 300

*****
LOAN DATA

AMOUNT=100000.00
RATE= 11.250%
# PMTS/YR= 12
YR 1 # PMTS= 12
TERM= 300
#PMT= 998.24
MTG TYPE:
AMORTIZING
*****

```

Investment Analysis on the HP 9815A

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LOAN SCHEDULES

Both yearly and periodic schedules are printed for two types of mortgages. Type 1 is constant payment, amortizing. Type 2 is constant principal. Periodic Payment may be either entered or calculated. The first year's printout may be adjusted to reflect fewer than a full year's payments.

Remaining balance may be calculated for any period, and if given a balance, the two closest periods are printed.

Variable Rate Mortgage (VRM) analysis is provided to calculate the effects of a new interest rate at any period and includes:

- (1) new payment to keep the same term,
- (2) new term to keep the same payment.

DEPRECIATION

Any positive amount may be depreciated via the following common methods: straight line, sum of the digits, and percent declining balance, such as 125%, 150%, and 200%. Useful Life is entered as a whole number and Salvage Value may be considered. Automatic crossover to straight line is an optional calculation when using any percentage-declining-balance method. If desired, the first year may be factored to account for less than 12 full months' depreciation.

The 9871A Printer is optional for printing the schedules.

CASH FLOW ANALYSIS

The Cash Flow Analysis program provides a projection of after-tax cash flows for up to twenty years. After-tax considerations include the effects of depreciation (up to 5 items using any commonly used method), loan amortization (up to 3 mortgages), incomes and expenses (up to 10 items, each of which may have a % growth. Expenses may also be specified as a % of gross income. of gross income).

Tax rates for ordinary income and capital gains income are user specified. Automatic property storage is provided on the tape cartridge for up to 50 different properties.

Sophisticated analyses such as discounted cash flow analysis, internal rate of return, and modified rate of return are available.

BUSINESS GRAPHICS

A 9871 Printer is required for the pie chart and bar graph of the Business Graphics program. Data is provided by the user and up to 12 entries are allowed.

EQUITY YIELD ANALYSIS

Three different programs are included in Equity Yield Analysis. They are Calculate Selling Price, Calculate Purchase Price, and Appreciation-Depreciation Analysis. Calculate Selling Price requires inputs of mortgage data for up to two loans, Net Operating Income (may include a percentage growth) and Purchase Amount. A list of selling prices is printed for a range of years and a range of equity yields. Calculate Purchase Price is similar except that Selling Price is entered as a dollar amount with a percentage growth or entered as a percentage growth applied to the (calculated)

CASH FLOW ANALYSIS

Property # 0

Demonstrating:	HP 9815A Calculator	and	HP 9871A Printer	
	YEAR 1	YEAR 2	YEAR 3	YEAR 4
Market Value(BOY)	95000.00	96900.00	98838.00	100814.76
Net Operating Income	11550.00	11781.00	12016.62	12256.95
Depreciation	4320.00	4060.80	3817.15	3588.12
Principal	900.52	1012.20	1137.78	1278.89
Interest	7942.52	7830.84	7705.26	7564.15
Payment	8843.04	8843.04	8843.04	8843.04
Taxable Income	-712.52	-110.64	494.21	1104.68
Cash Flow Before Tax	2706.96	2937.96	3173.58	3413.91
Tax	-342.01	-53.11	237.22	530.25
Cash Flow After Tax	3048.97	2991.07	2936.36	2883.66
Net Equity Income	5849.49	5941.27	6050.90	6178.85
Market Value(EOY)	96900.00	98838.00	100814.76	102831.06

YEARLY RATIO ANALYSIS:

Gross Income Multiplier	6.460	6.460	6.460	6.460
Loan/Value Ratio	69.246%	66.864%	64.425%	61.918%
Debt/Equity Ratio	225.162%	201.789%	181.093%	162.589%
CAP Rate	11.920%	11.920%	11.920%	11.920%
Coverage Ratio	130.611%	133.223%	135.888%	138.606%
Operating Ratio	23.000%	23.000%	23.000%	23.000%
Cash on Cash Return	10.026%	10.881%	11.754%	12.644%

SALE DATA:

Selling Price	96900.00	98838.00	100814.76	102831.06
Adjusted Basis	90680.00	86619.20	82802.05	79213.93
Selling Costs	4845.00	4941.90	5040.74	5141.55
Total Gain	1375.00	7276.90	12971.97	18475.58
Excess Depreciation	1375.00	2620.80	3557.95	4266.07
Ordinary Tax	660.00	1257.98	1707.82	2047.71
Capital Gains	0.00	4656.10	9414.02	14209.51
Capital Gains Tax	0.00	1629.64	3294.91	4973.33
Mortgage Balance	67099.48	66087.28	64949.50	63670.61
Proceeds of Sale	24955.52	27808.82	30824.52	34018.90
Net Proceeds	24295.52	24921.20	25821.79	26997.86

Purchase Price. App-Dep Analysis calculates allowable percentage increase or decrease in value for any set of years and equity yields. Inputs of cap rate, loan to value, loan term, and rate are required. If the 9871 Printer is used, a plot of App-Dep is optional.

N i Pmt PV FV

The N i Pmt PV FV program simulates the five top row keys on the HP Business Calculators. Data may be entered for any three knowns and the two unknowns calculated. Any combination of term, interest rate, payment amount (end-of-period), present value, and future value may be entered as long as they are positive values. Entries may be revised without reentering the other known values.

INCOME STATEMENT

This program is a pro forma income statement capable of projecting 20 periods. These may be yearly, quarterly, or whatever period length is desired. A short form with 9 preselected input categories or a long form with 28 preselected input categories may be run. Each entry may be a percentage of net sales or a dollar amount. Cutoff to determine % or \$ entry is user defined. Corrections may be made to individual entries. The 9871 Printer is required.

DIRECTORY

The Directory program is accessible from any other program via a special function key. It allows the user to select any one of 12 programs via the special function keys and overlay #1. This is also the program that AUTO START runs.

PROGRAM LISTING, CARTRIDGE LISTING, DATA ENTRY INSTRUCTIONS, AND DEMO PROGRAMS

The special function key Program List provides a description of each program in the package. Each program description is then selectable via its special function key. The Cartridge Listing provides the user with a comprehensive list of all files on the cartridge. This is an up-to-date listing showing the current status of each file, current length, and maximum length. The Data Entry Instructions program lists the various methods of data entry used in the software package. The Demo program is useful to quickly show capabilities of the 9815 and 9871. It provides an automatic demonstration of the system without entering data. A Cash Flow Analysis and Pie Chart/Bar Graph is provided for user selection.

HARDWARE ORDERING INFORMATION

HP 9815A Opt. 001	2008 Steps
Optional equipment:	Opt. 002 I/O slots
	HP 9871A Opt. 15
	HP 9862A Opt. 15

SOFTWARE ORDERING INFORMATION

HP 9815 Investment Analysis	
Part Number	09815-12000

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Sales and service from 172 offices in 65 countries.
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