The HP-92 Investor...

Financial functions at your fingertips. From Hewlett-Packard.

Look inside this booklet for a brief demonstration.

The HP-92 Investor Solves Your Financial Problems.

Hewlett-Packard invites you to try out the new HP-92 Investor—the portable calculator that prints answers to your financial problems. The HP-92 Investor lets you evaluate financial alternatives involving compound interest, balloons, internal rate of return, net present value, bonds and notes, depreciation—and more.

And the HP-92 Investor is so easy to use! To see just how easy, we urge you to work through the few sample problems shown in this booklet using the fully-operable 92 Investor at this display.

Let's try some simple arithmetic. First set the On-Off switch of the HP-92 Investor as shown here OFF ON to ON.

The only rule you have to remember on a Hewlett-Packard calculator is that the operation is performed when the function key is pressed. If you have to key in more than one number before performing an operation (as is the case with arithmetic, when there are two numbers used in the calculation) use the ENTER↑ key to separate the first number from the second.

Now perform the arithmetic problems by pressing the keys shown.

Step	Press	Display
1. Perform 12 + 3.	12 ENTER↑ 3 +	***15.00***
2. Perform 13 ÷ 3.	13 ENTER↑ 3 ÷	***4.33***
3. Multiply the result of the previous calculation by 5.	5 ×	***21.67***

Now turn to the next page to begin working a few representative financial problems.

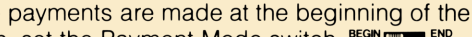
Applications.

Loan with Balloon Payment.

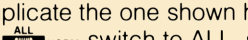
The HP-92 Investor uses an innovative new design to make the solving of financial problems simple and intuitive—you don't have to remember "cookbook" solutions. All you do is key in any four of the five elements of a financial problem—present value, future value, payment, interest, and number of periods—in any order. Then press the fifth key for the answer.

Just remember: Outgoing cash flows are represented as negative values. Incoming cash flows are positive. Now tackle a problem.

The Problem: A "third party" leasing firm is considering the purchase of a minicomputer priced at $63,000. The firm intends to achieve a 13% annual yield by leasing the computer to a customer for a 5-year period. Ownership is retained by the leasing firm, and at the end of the lease they expect to sell the computer for at least $10,000. What should they establish as the monthly payment in order to realize their desired yield? (The lease payments are made at the beginning of the month.)

The Solution: Since payments are made at the beginning of the month, set the Payment Mode switch 

of the HP-92 to BEGIN.

If you want the printed tape you produce to duplicate the one shown here, set the Print Mode 

switch to ALL, so that the printer will show you all entries, all functions executed, and all intermediate and final answers.

Now merely press the keys shown below. As you can see, each key performs as many as three different functions; to select one of the functions written below a key, just press the gold f or the blue g prefix key before pressing the function key. So, to find the monthly payment:

Press	Printout	Comment
CL FIN	CL F	
63000 CHS PV	-63000.00 PV	Total cost of minicomputer.
13 f 12÷	13.00 12÷	Desired monthly yield.
5 f 12×	5.00 12×	Total number of months.
10000 FV	10000.00 FV	Expected selling price.
PMT	BEGIN PMT	
	1300.16 ***	Monthly payment to be received.

On the HP-92 Investor, changing any part of a problem is easy, too. For example, if you wanted to figure the monthly payment for the same computer if its price was $70,000:

Press	Printout	Comment
70000 CHS PV	-70000.00 PV	New price.
PMT	BEGIN PMT	
	1457.73 ***	New monthly payment to be received.

Similiarly, to find the annual yield if the monthly payments were increased to $1500:

Press	Printout	Comment
1500 PMT	1500.00 PMT	The new payment.
i	BEGIN i	
	1.18 ***	
12 ×	12.00 ×	
	14.12 ***	Percent annual yield.

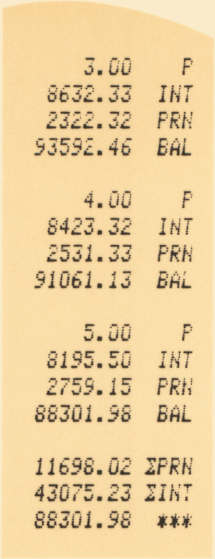
Amortization Schedule.

The HP-92 Investor can print complete or partial amortization schedules for loans and other annuities. Each element is printed with a clear, unmistakable label, and after the last period the schedule shows the remaining balance and the total amount paid to both principal and interest.

The Problem: You wish to purchase a new warehouse and have just obtained a loan of $100,000 for 20 years at 9% interest. Generate an amortization schedule for the first 5 years of the loan, assuming that annual payments are made.

The Solution: First, ensure that the Print Mode switch MAN / ALL / NORM is set to ALL, and set the Begin-End switch BEGIN NOTE / END BOND to END. Then press the keys shown here:

Press	Printout	Comment
CL FIN	CL F	
100000 PV	100000.00 FV	Loan amount received.
20 n	20.00 n	Total term of the loan.
9 i	9.00 i	Annual interest rate.
PMT	END PMT	
	-10954.65 ***	Annual mortgage payment.
1 f P1	1.00 P1	First period of the schedule.
5 g P2	5.00 P2	Last period of the schedule.
AMORT	AMRT	
	1.00 P	
	9000.00 INT	
	1954.65 PRN	
	98045.35 BAL	Schedule for first period.
	2.00 P	
	8824.08 INT	
	2130.57 PRN	
	95914.78 BAL	Schedule for second period.



Total amount paid to principal.
Total amount paid to interest.
Remaining balance.

Internal Rate of Return (IRR).

Internal Rate of Return (IRR) is the interest rate that equates the present value of all cash flows with an initial cash flow. IRR is also called the yield or discounted rate of return.

On your HP-92, the IRR function solves for the internal rate of return for a maximum of 30 uneven cash flows (excluding the initial cash flow).

The Problem: An investor pays $65,000 for a duplex that he intends to keep 5 years and then sell. The first year he knows he will have to spend a considerable amount for repairs. Will he achieve a desired 9% after-tax yield with the following after-tax cash flows? Note that the duplex is sold for $74,500 during the fifth year. What is the estimated rate of return that the investor can get?

Year	*Cash Flows ($)*
1	−100
2	4900
3	5300
4	4800
5	74500

The Solution: First ensure that the Print Mode switch ALL MAN NORM is set to ALL. Then press the keys shown below.

Press	Printout	Comment
f CLEAR	CLEAR	Clear financial and storage registers.
5 n	5.00 n	Number of cash flows.
65000 CHS STO 0	-65000.00 → 0	Initial investment.
100 CHS STO 1	-100.00 → 1	First cash flow.
4900 STO 2	4900.00 → 2	Second cash flow.
5300 STO 3	5300.00 → 3	Third cash flow.
4800 STO 4	4800.00 → 4	Fourth cash flow.
74500 STO 5	74500.00 → 5	Fifth cash flow.
f IRR	IRR	
	7.10 ***	Internal Rate of Return. The investor does not receive his 9% after-tax yield.

Bonds and Notes.

The HP-92 Investor performs calculations involving bills, notes, bonds, certificates of deposit, and other interest-bearing obligations—and the HP-92 can print all elements of a bond or note calculation, too.

The Problem: Calculate the price of a corporate bond with a settlement date of June 20, 1977, a maturity date of August 30, 1978, a coupon rate of 5.65% and a yield of 6.84%.

The Solution: Bonds are calculated assuming a 360-day year, so set the Day Basis switch 360 ▮ 365 to 360. Then set the Payment Mode switch BEGIN NOTE ▮ END BOND to BOND.

Press	Printout	Comment
CL FIN	CL F	
6.201977 f IS.ST	6.201977 ST	Issue date keyed in as month, day, year.
8.301978 g MT	8.301978 MT	Maturity date keyed in as month, day, year.
5.65 g CPN	5.65 CPN	Coupon rate.
6.84 YIELD	6.84 YLD	Yield.
PRICE	BOND *360 PRC	The bond's price and accumulated interest.
	1.74 AI	
	98.65 ***	

The HP-92 Investor changes to perform note computations with the flick of a switch.

The Problem: Find the annual yield of a Certificate of Deposit with an issue date of July 6, 1976, settlement date of August 23, 1976, and maturity date of December 20, 1976. The bond's interest rate is 5.8% and the price is $100.00.

The Solution: This note assumes a 360-day year, so leave the Day Basis switch set to 360, and change the Payment Mode switch BEGIN/NOTE ▮ END/BOND to NOTE. Then press the keys shown below.

Press	Printout	Comment
CL FIN	CL F	
7.061976 ENTER↑	7.061976 ENT↑	Issue and settlement dates
8.231976 f IS.ST	8.231976 ISST	are loaded into the Investor.
12.201976 g MT	12.201976 MT	Maturity date.
5.8 g CPN	5.80 CPN	Interest rate.
100 PRICE	100.00 PRC	Price.
YIELD	NOTE *360 YLD	
	5.76 ACT	Calculated annual yield is
	5.76 ***	5.76 percent. (ACT represents yield on actual/ 360 day basis.)

Depreciation.

Using the HP-92 Investor, you can quickly and easily compute depreciation using the straight line, sum-of-the-years-digits, or declining balance method. And the HP-92 can print a complete depreciation schedule for the life of an asset, or it can calculate the depreciation allowance for a specific period.

The Problem: A property has just been acquired for $150,000. This purchase price is allocated between $25,000 for land and $125,000 for improvements (that is, a building). The remaining useful life of the building is agreed to be 25 years, and there is no salvage value forecast at the end of the building's life, so the depreciable cost is $125,000. This cost is also the tax basis of the investment in the building.

Generate the first five years depreciation schedule using the declining balance method with a factor of 150%.

The Solution: First ensure that the Print Mode switch 

is set to ALL. Then press the keys shown below.

Press	Printout	Comment
CL FIN	CL F	
125000 f BOOK	125000.00 BOOK	Book value.
25 f LIFE	25.00 LIFE	Life of asset.
150 g FACT	150.00 FACT	Declining balance factor.
1 g N1	1.00 N1	First period of the schedule.
5 g N2	5.00 N2	Last period of the schedule.
DB	DB	Declining balance depreciation schedule generated.
	1.00 N	
	7500.00 DPN	
	117500.00 RDV	
	2.00 N	
	7050.00 DPN	
	110450.00 RDV	
	3.00 N	
	6627.00 DPN	
	103823.00 RDV	
	4.00 N	
	6229.38 DPN	
	97593.62 RDV	
	5.00 N	
	5855.62 DPN	
	91738.00 RDV	
	33262.00 ΣDPN	
	91738.00 ***	

Accessories.

And The HP-92 Investor Has More.

In working through the examples in this booklet, you have seen just a small sample of the amazing financial power of the HP-92 Investor. But the HP-92 has so much more!

The Investor does internal rate of return (IRR) and net present value (NPV) for up to 30 uneven cash flows. It also contains powerful mathematics and statistics functions like mean, standard deviation, and linear regression, and it contains a built-in calendar that can calculate the day of the week or the number of days between two dates. With 30 storage registers for data, handy percent functions, and accuracy you can trust, the HP-92 Investor is the ideal calculator for anyone who must evaluate financial alternatives.

In addition to the many features on the calculator itself, look at these accessories provided with every Investor:

HP-92 Owner's Handbook. This comprehensive manual teaches you to use every feature of the HP-92 Investor. Its 121 pages are filled with information, illustrations and examples.

HP-92 Applications Book. This text, an invaluable aid to getting the most from your HP-92 Investor, contains dozens of specialized applications in areas like simple mortgages, consumer loans, depreciation, financial analysis, equity investment analysis, Canadian mortgages, statistics, and securities.

Rechargeable Battery Pack. These powerful nickel-cadmium batteries give your HP-92 complete portability, so you can operate your calculator anywhere.

AC Adapter/ Recharger. Lets you operate your HP-92 Investor from ordinary house current while simultaneously recharging the batteries.

Carrying Case. The elegant design of this attractive, simulated-leather case belies its field-tested toughness.

Paper Rolls. Each HP-92 comes complete with two rolls of special thermal paper for the quiet printer in the calculator. Extra paper is available as an optional accessory.

Other Accessories.

Look at these optional accessories you can obtain to enhance the value and usability of your HP-92 Investor.

Security Cable. A tough, 6-foot long steel cable that safeguards your HP-92 by locking it to a desk or work surface. Attractive vinyl covering prevents scarring of furniture.

Reserve Power Pack. Attaches to the Investor's AC adapter/recharger to keep an extra battery pack freshly charged and ready for use. Comes complete with extra battery pack.

The Intangibles.

In this brief demonstration you have seen how easy it is to use the HP-92 Investor to evaluate financial alternatives. If you want a more extensive discussion of the HP-92, ask a salesperson for a copy of the HP-92 Owner's Handbook, which gives the complete operation of every feature on the HP-92 Investor's keyboard.

But when you purchase a calculating instrument from Hewlett-Packard, your investment yields much more than the functions you see on the keyboard. It yields intangibles—those hard-to-measure features that show up after you've used the calculator a hundred or a thousand times. Things like Hewlett-Packard "human engineering"—smooth, effortless operation, pleasant coloring, a quiet thermal printer. Things like traditional HP quality.