Induces have been source on the second secon



NOTICE

The program material contained herein is supplied without representation or warranty of any kind. Hewlett-Packard Company therefore assumes no responsibility and shall have no liability, consequential or otherwise, of any kind arising from the use of this program material or any part thereof.

INTRODUCTION

This HP-41C Solutions book was written to help you get the most from your calculator. The programs were chosen to provide useful calculations for many of the common problems encountered.

They will provide you with immediate capabilities in your everyday calculations and you will find them useful as guides to programming techniques for writing your own customized software. The comments on each program listing describe the approach used to reach the solution and help you follow the programmer's logic as you become and expert on your HP calculator.

KEYING A PROGRAM INTO THE HP-41C

There are several things that you should keep in mind while you are keying in programs from the program listings provided in this book. The output from the HP 82143A printer provides a convenient way of listing and an easily understood method of keying in programs without showing every keystroke. This type of output is what appears in this handbook. Once you understand the procedure for keying programs in from the printed listings, you will find this method simple and fast. Here is the procedure:

1. At the end of each program listing is a listing of status information required to properly execute that program. Included is the SIZE allocation required. Before you begin keying in the program, press **XEQ ALPHA** SIZE **ALPHA** and specify the allocation (three digits; e.g., 10 should be specified as 010).

Also included in the status information is the display format and status of flags important to the program. To ensure proper execution, check to see that the display status of the HP-41C is set as specified and check to see that all applicable flags are set or clear as specified.

- 2. Set the HP-41C to PRGM mode (press the **PRGM** key) and press **GTO** • to prepare the calculator for the new program.
- 3. Begin keying in the program. Following is a list of hints that will help you when you key in your programs from the program listings in this handbook.
 - a. When you see " (quote marks) around a character or group of characters in the program listing, those characters are ALPHA. To key them in, simply press ALPHA, key in the characters, then press ALPHA again. So "SAMPLE" would be keyed in as ALPHA "SAMPLE" (ALPHA).
 - b. The diamond in front of each LBL instruction is only a visual aid to help you locate labels in the program listings. When you key in a program, ignore the diamond.
 - c. The printer indication of divide sign is /. When you see / in the program listing, press (+).
 - d. The printer indication of the multiply sign is \ddagger . When you see \ddagger in the program listing, press \Join .
 - e. The H character in the program listing is an indication of the **APPEND** function. When you see H, press **APPEND** in ALPHA mode (press **APPEND** and the K key).
 - f. All operations requiring register addresses accept those addresses in these forms:

nn (a two-digit number) IND nn (INDIRECT: , followed fy a two-digit number) X, Y, Z, T, or L (a STACK address: followed by X, Y, Z, T, or L) IND X, Y, Z, T or L (INDIRECT stack: followed by X, Y, Z, T, or L)

Keystrokes

Printer Listing

Indirect addresses are specified by pressing and then the indirect address. Stack addresses are specified by pressing • followed by X, Y, Z, T, or L. Indirect stack addresses are specified by pressing • and X, Y, Z, T, or L.

Display

01+LBL "SAM PLF"		$01 LBL^{T}SAMPLE$
02 "THIS IS	ALPHA THIS IS A ALPHA	02 THIS IS A
A "	ALPHA APPEND SAMPLE	03 ^T ⊢ SAMPLE
03 "HSAMPLE "	AVIEW ALPHA	04 AVIEW
04 AVIEW	6	05 6
05 6	ENTER+	06 ENTER 1
06 ENTER1		07 0
07 -2	2 (613)	07 -2
08 / 000	÷	08 /
10 STO IND	XEQ ALPHA ABS ALPHA	09 ABS
L	STO	10 STO IND I
11 "R3="		
12 ARCL 03	R3= MARCE 03	11 R3=
13 AVIEW	AVIEW	12 ARCL 03
14 RTN	ALPHA	13 AVIEW
	RTN	14 RTN

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1.	FORM 1040	1
2.	SCHEDULE A, ITEMIZED DEDUCTIONS 1	8
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8.	COMMON ROUTINES)3

All programs are based on original code written by Anthony A. Vertuno

PROGRAM DESCRIPTION

1

FORM 1040

PURPOSE -

The purpose of this program is to aid the user in completing U. S. Individual Income Tax Form 1040.

FEATURES/WARNINGS -

The program is relatively straightforward in its operation. Once begun, it steps through the tax form displaying values it assumes to be correct for each line of the form.

Lines that require input from the user are denoted by a colon (":") between the line name (a string of five characters) and the current line value (some number). An example of a line of this type is "STATS: 2.", where "STATS" is an abbreviation for "Filing Status", the colon indicates that this is a userspecified value, and the "2." is the current value. At any time the user encounters a program display similar to the one just described, its line value may be changed simply by keying in some new value (using the numeric keys) and pressing [R/S] (to continue the program). Manual calculations may be performed at this time using the HP-41's stack in order to arrive at the desired value to be input.

Lines that represent values calculated by the program, and which should be copied to the form, are denoted by an equal sign ("=") between the line name and the line value. An example of this is "NETDV= 545.", where "NETDV" is an abbreviation for "Net Dividends", the equal sign indicates that this is a program-calculated value, and "545." is the current line value. At any time a program display similar to the one just described is encountered, its line value MUST NOT be changed by the user (i.e., by pressing any key other than [R/S]), or the program may perform calculations based on the altered (and incorrect) value.

Not all form 1040 lines have been included in the program. The lines omitted have been so in order to leave space in the computer for programs from this package. The lines omitted were chosen because of their (hopefully) limited use. If the user finds that he/she requires one of the omitted items, in all cases the value may be added into a neighboring, existing line item with no ill effect on the "bottom line" results. For example, all deleted line items under "Income" could be totalled by the user and added to line 21 (other income).

The following form 1040 lines have been omitted but may be combined with neighboring lines if needed:

Line 11: alimony recieved, Line 14: 40% capital gains distributions, Line 15: supplemental gains or losses, Line 16: fully taxable pensions, Line 17: other penisons/taxable amount, Line 19: farm income or loss, Line 20: unemployment compensation/taxable amount, Line 24: employee business expenses, Line 26: payments to a Keogh, Line 27: penalty on early withdrawal of savings, Line 30: disability income exclusion, Lines 41 through 48: credits, Lines 51 through 58: other taxes, Lines 60 through 66: payments.

The program works equally well in any display mode (FIX, SCI, ENG, O through 9), but best results will be obtained using either FIX O or 2 which correspond to whole dollar amounts and dollars-and-cents amounts respectively. Money values may be entered in either fashion regardless of the display mode and will be remembered by the program exactly as they are input. However, the display mode does have an effect on the program's output. All output values will be generated using the input values rounded to the current display mode (viz., an input of 9.25 in FIX O will be rounded to 9 before it is used in a calculation whereas the same value in FIX 2 will not be altered), and will cause small but perhaps significant deviations in output. The fact that the input values are stored unchanged allows the user to run the program again with the same inputs in another display mode and see the difference between using whole dollar and dollars-and-cents values.

The program does no error checking! All input values are assumed to be correct, regardless of their values, and are used as such. Erroneous values will usually not halt the program. The program may either be run to completion, or manually halted and restarted. Either way, the valid inputs may be skipped by pressing [R/S] and the invalid inputs corrected by entering the proper value when the line is displayed.

Two other forms may be completed while in the process of completing form 1040. These are Schedule A (Itemized Deductions) and Schedule G (Income Averaging). The program will ask the user if either of the form-completing programs is desired. If the user answers in the affirmative, the corresponding program must have already been loaded into the computer or the form 1040 program halt with the fatal error "NONEXISTENT". If this occurs, the user's only recourse is to load the missing program (if desired) and to restart the 1040 program. If the programs exist in memory, and the user answers yes to the proper questions, the required programs will be executed and, at their respective terminations, the 1040 program will be continued. The above-described option is meant only as a convenience. If the user prefers to complete each form independent of the others, he or she may. The program is compatible with printers. If a printer is attached, the program assumes it is on. All input values are echoed and all output values are streamed to the printer. With respect to the user, input values are treated in the same fashion regardless of the printer's presence. The output of program generated values, on the other hand, differs dramatically based on the printer's existence. Without a printer, the program halts at each output value in the same fashion that it does when asking for input thus allowing the user to record the value. With a printer, program-generated output does not halt program execution, is not displayed, and is recorded on the printer, thus minimizing user interaction.

One feature of the program allows the user to skip all input prompts if the existing values are known to be correct. In this mode, the user without a printer may view only those lines calculated by the program. The user with a printer may rapidly generate an uninterrupted printout of both input and output. This mode is active when the flag O annunciator is lit in the display.

SAMPLE PROBLEM

Fill out the form on pages 7 and 8:

The following example assumes:

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- * that programs "FT" (form 1040), "T2" (1982 tax rate), and "0" (common subroutines) have been loaded into memory.
- * there are 29 available data registers (i.e., SIZE has been set to a number greater than 28).
- * the program is in "input mode." This is accomplished by pressing [XEQ] "P" repeatedly (no more than twice is necessary) until the annunciator for flag O cannot be seen in the display.
- * all pertinent data registers contain the value O. This is only for convenience in describing the example and is not required. If the user desires to duplicate the example exactly, and is certain that no important data will be destroyed, the computer's CLRG function may be employed to clear data memory (via [XEQ] "CLRG").
- * the display mode is FIX O.
- * flags 28 and 29 are set (HP-41 decimal point and digit grouping
 flags).

DISPLAY	INPUT	KEYSTROKES	COMMENTS
		[XEQ] "FT"	
FORM 1040		[R/S]*	Identifies the program.
STATS: O.	2	ER/S]	Lines 1-5, filing status.
EXMPT: O.	4	ER/S]	Line 6e, total number of
			exemptions claimed.
WAGES: O.	28647	ER/S]	Line 7, Wages, salaries,
			tips, etc.
INT : O.	428	ER/S]	Line 8, interest income.
DIVID: O.	745	ER/S]	Line 9a, dividends.
EXCLN: O.	200	ER/S]	Line 9b, exclusion.
NETDV= 545.		[R/S]*	Line 9c, the difference
			between 9a and 9b.
STRFD: O.	254	ER/S]	Line 10, State and local
			income tax refunds.
SCH C: O.		ER/S]	Line 12, business income or
			loss.
SCH D: O.		[R/S]	Line 13, capital gain or loss

SOLUTION

DISPLAY	INPUT	KEYSTROKES	COMMENTS
	============		
SCH E: 0.	8633	ER/S]	Line 18, rents, royalties, partnerships, estates,
OTHIN: O.	285	[R/S]	trusts, etc. Line 21, other income.
TOTIN= 38,792. EXPNS: 0.		ER/S]* ER/S]	Line 22, total income. Line 23, moving expense.
IRA : O.	2000	ER/S]	Line 25, payments to an IRA.
SCH W: 0.	348	[R/S]	Line 29, deduction for a mar-
TOTAD= 2.348.		[R/S]*	Line 31, total adjustments.
AGI = 36,444.		ER/S]*	Line 32, adjusted gross income.
SCHED A ?		[R/S]	This query comes up in ALPHA mode. Pressing "Y" causes
			the Schedule A program. Any other response continues the
			current program.
DEDCT: O.	2707	ER/S]	Line 34a, itemized deduc-
			program was not run, this
			is a prompt for input. If
			the Schedule A program was
			run, this value will be
LIN35= 33,737.		[R/S]*	Line 35, the difference
EXMP\$ = 4.000.		ER/S]*	Line 36, line 4e x 1000.
TXABL= 29,737.		ER/S]*	Line 37, taxable income.
TX82T= 5,523.		[R/S]	Line 38, 1982 tax. If program "T3" were loaded instead of "T2" the line
			of "82". The final "T"
			indicates that the value was extracted from the tax
			tables. If the tables could
			not be used, the "T" would be
		L b/2J	Omitted. This query comes up in ALPHA
SCHED G ?			mode. Pressing "Y" causes
			the program to try to execute
			the Schedule G program. Any other response continues the
CPNIT. O	124	[R/S]	line 49. total credits.
NETTX= 5,399.	127	ER/S]*	Line 50, the difference
· · · · · · · · · · · · · · · · · · ·			between lines 40 and 49.
OTHTX: 0.		[R/S]	The total of lines 51 through 58.

DISPLAY	INPUT	KEYSTROKES	
TOTTX= 5,399.		[R/S]*	Line 59, total tax. The sum of lines 50 through 58.
TOTPD: 0.	5323	ER/S]	Line 67, total tax paid. The sum of lines 60 through 66.
BLDUE= 76.		[R/S]*	Line 71, the amount you owe. If line 67 were greater than line 59, this value would be line 68, the amount overpaid, and would read "REEND= x"
76.			This is a superfluous value left in the X-register.

* [R/S] in this instance is not necessary if a printer is attached.

7	7		
7	7		
			,
	_		

Form	1	040	
-	-	• • •	

Department of the Treasury—Internal Revenue Service U.S. Individual Income Tax Return

19 82	(6)

For the y	ear Janua	ry 1–D	ecembe	r 31, 1982, or other ta	x year beginning		, 1982	, ending		, 19).	OMB No. 1	545-0074
Use	Your first	name ar	d initial	(if joint return, also give	spouse's name and ini	tial)	Last	name		You	r socia	l security i	number
label. Other- wise.	Present ho	ome addı	ess (Nur	nber and street, including	apartment number, or	rural route)				Spo	use's s	ocial securi	ty no.
please	City, town	or post	office, S	tate and ZIP code				Your occu	upation	_ ▶	!	!	
or type.								Spouse's	occupation]	•			
President Election (tial Campaign	Do If i	you w oint re	ant \$1 to go to this turn, does your spo	fund? Jse want \$1 to go	• • • • • • • • • • • • • • • • • • •		Yes	///	No no	ote: Cl ot incre ice you	hecking ''Y ase your ta ir refund.	es" wil ax or re
riling (N	1		Single			For Priva	acy Act and	Paperwork F	Reduction	n Act No	tice, see Ins	tructions
Filing 3	status	2	V	Married filing joint	return (even if o	only one had i	ncome	e)					
Check on	nly	3		Married filing separat	e return. Enter spor	use's social secu	rity no.	above and	full name h	ere 🕨			
one box.		4		Head of househol	d (with qualifyin	g person). (Se	e page	6 of Instru	ctions.) If th	ne quali	ifying	person is y	your un
				married child but	not your depend	ent, enter chi	ld's na	me 🕨					
		5		Qualifying widow(er) with depend	ent child (Yea	ar spol	use died	▶ 19). (See	page 6	of Instruction	ons.)
Evomnti	ione	6a	V	Yourself		65 or over		_	Blind	1	Enter	^r number of s checked	2
-vemhri	10113	b	V	Spouse		65 or over			Blind		on 6	a and b	. 2
Always ch he box la	heck abeled	c	First	names of your depe	ndent children w	ho lived with y	you 🕨	BILL	<u>É Dave</u>		Enter of ch	r number ildren	2
ourself.)	listed	on 6c 🕨	2
Check ot	her thev	d	Other	dependents:	(2) Relationship	(3) Number of	(4) Did	dependent	(5) Did you more than one	provide e-half of	Fnte	r number	
apply.				(1) Name		in your home	\$1,000	or more?	dependent's	support?	of ot	her	
								-			depe Add	ndents 🕨	·
											enter	red in	14
		e	Total	number of exempti	ons claimed .	<u></u>	<u></u>		· · · · ·	· · · -	boxe	s above	
ncome		7	Wage	s, salaries, tips, et	c					·	_2	8,64 /	
	taab	8	Intere	est income (attach Se	chedule B if over \$4	00 or you have	any All-	Savers inte	erest)	. 8		428	
Copy B o	f your	9a	Divide	ends (attach Schedu	le B if over \$400)) 145	, 9b	Exclusion_	200	////		5 4 5	
Forms W-	-2 here.	C	Subtr	act line 9b from lin	e 9a			• • • •		·	<u></u>	345	-
f you do	not have	10	Refur	nds of State and loc	al income taxes	(do not ente	r an ar	nount un	less you d	e-		251	
a W-2, se bage 5 o	ee f		ducte	d those taxes in an	earlier year—se	e page 9 of In	structi	ons)	• • • • • •	· 10		234	-
nstructio	ins.	11	Alimo	ony received				••••		. 12		<u> </u>	
		12	Busin	less income or (loss) (attach Schedu	ıle C)	•••			$ \frac{12}{12} $	<u>-</u>	<u> </u>	-
		13	Capit	al gain or (loss) (a	ttach Schedule I)			· · · · · ·	: 13		V	
		14	40%	capital gain distri	outions not repo	orted on line	13 (See	e page 9 o	f Instruction	s) <u>14</u> 15			
		15	Supp	lemental gains or (osses) (attach F	orm 4/9/).				16			
		10	Fully	taxable pensions, II	A distributions,	and annuities	5 not ro 17a	eportea o 	n line 17.	· 1			-
		1/a	Other	pensions and ann	inties. Total rece	n nogo 10 of	Inctru	l Intiona		″/// 17	'b		
		10	Donte	ble amount, il any, i	hine octobe tr	usts ata (att	mstru	bodulo E	· · · · · ·	. 18	<u> </u>	8633	-
		10	Form	income or (loss) (attach Schedule	F	ach St		•••••	19		0,000	-
Please		202	linem	nicome or (1033) (ation (insurance)	Total received	20a	1	· · · · · • •				-
attach ch	eck	20a	Taval	ble amount if any f	rom worksheet o	n page 10 of I	nstruct	tions	·····	20	b		
order her	e.	21	Other	r income (state nature	and source—see pa	age 10 of Instru	ctions)			· ////			-
			othor			-80 -0 01				21		285	
		22	Total	income. Add amour	nts in column for	lines 7 throu	gh 21)	22	2	38.792	2
		23	Movii	ng expense (attach	Form 3903 or 3	3903F)	23		0				
Adjustm	ients	24	Empl	oyee business expe	nses (attach For	m 2106)	24						
o Inco	me	25	Paym	ents to an IRA. You	must enter cod	le from page							
See			11 (.)			25	2,	000				
nstruc-		26	Paym	ents to a Keogh (H	.R. 10) retireme	nt plan	26			\///			
bage 11)		27	Penal	ty on early withdraw	val of savings .		_27			////			
		28	Alimo	ony paid			28	.					
		29	Dedu	ction for a married	couple when bo	th work (at-		-					
			tach	Schedule W)			_29	34	-8	\///			
		30	Disab	oility income exclusi	on (attach Form	2440)	_30			////			
		31	Total	adjustments. Add li	nes 23 through 3	<u>30</u>	<u></u>			31		2,348	_ <u></u>
Adjuste	d	32	Aajus \$10.0	000, see "Earned	Subtract line 3.	(line 62) or	.∠.Ift I page	nis line 15 of l	ns less that	n s.	1		
Gross I	Income	1	If you	want IRS to figure	your tax, see pa	ge 3 of Instru	ctions		1	► 32	2 3	6,477	

8

-	33	Amount from line 32 (adjusted gross income)	33	36,444	
Tax	34a	If you itemize complete Schedule A (Form 1040) and enter the amount from Schedule A line 30	34a	2.707	
Compu-	•	Caution: If you have unearned income and can be claimed as a dependent on your			
tation		parent's return, check here \blacktriangleright \square and see page 12 of the Instructions. Also see			
(See		page 12 of the Instructions if:			
Instruc-		 You are married filing a separate return and your spouse itemizes deductions, OR You file Form 4563, OR You are a dual-status alien. 			
page 12)	34b	If you do not itemize, complete the worksheet on page 13. Then enter the allowable			
		part of your charitable contributions here	34b		
	35	Subtract line 34a or 34b, whichever applies, from line 33	35	33,737	
	36	Multiply \$1,000 by the total number of exemptions claimed on Form 1040, line 6e	36	4,000	
	37	Taxable Income. Subtract line 36 from line 35	37	29,737	
	38	Tax. Enter tax here and check if from Tax Table, Tax Rate Schedule X, Y, or Z,			
		or 🗌 Schedule G	38		
	39	Additional Taxes. (See page 13 of Instructions.) Enter here and check if from Torm 4970,	39		
		Form 4972, Form 5544, or section 72 penalty taxes			
	40	Total. Add lines 38 and 39	40	<u> </u>	
Credits	41	Credit for the elderly (attach Schedules R&RP) 41	-		
	42	Foreign tax credit (attach Form 1116)	-		
(See Instruc-	43	Investment credit (attach Form 3468)	-		
tions on	44	Partial credit for political contributions	-		
page 13)	45	Credit for child and dependent care expenses (Form 2441).	-		
	46	Jobs credit (attach Form 5884)	-		
	47	Residential energy credit (attach Form 5695)	-		
	48	Other credits—see page 14 Total credits. Add lines 41 through 48		124	
	50	Balance Subtract line 49 from line 40 and enter difference (but not less than zero)	- 49 -	5 300	
	51	Solf employment tax (attach Schedule SE)	51		
Other	52	Minimum tax (attach Form 4625)	52		
Taxes	53	Alternative minimum tax (attach Form 6251)	53		
(Including	54	Tax from recenture of investment credit (attach Form 4255)	54		
Advance	55	Social security (FICA) tax on tip income not reported to employer (attach Form 4137).	55		
Payments)	56	Uncollected employee FICA and RRTA tax on tips (from Form $W-2$)	56		
	57	Tax on an IRA (attach Form 5329)	57		
	58	Advance earned income credit (EIC) payments received (from Form W-2)	58		
06	59	Total tax. Add lines 50 through 58	59	<u>5,399</u>	
P ayments	60	Total Federal income tax withheld	-		
	61	1982 estimated tax payments and amount applied from 1981 return . 61	-		
Attach Forms W–2.	62	Earned income credit. If line 33 is under \$10,000, see			
W-2G, and		page 15 of Instructions	-		
w-2P to front.	63	Amount paid with Form 4868	-		
	64	Excess FICA and RRTA tax withheld (two or more employers) .	-		
	65	Credit for Federal tax on special fuels and oils (attach			
	66	Form 4136)	-		
	67	Total. Add lines 60 through 66	- 67	5 373	
	68	If line 67 is larger than line 59 enter amount OVERPAID	68		
Refund or	69	Amount of line 68 to be REFUNDED TO YOU	69		
Amount	70	Amount of line 68 to be applied to your 1983 estimated tax > 70			
tou uwe	71	If line 59 is larger than line 67, enter AMOUNT YOU OWE. Attach check or money order for full amount			
		payable to Internal Revenue Service. Write your social security number and "1982 Form 1040" on it. 🕨	71	76	
		(Check ▶ _ if Form 2210 (2210F) is attached. See page 16 of Instructions.) ▶ \$			
Please	Und of m	er penalties of perjury, I declare that I have examined this return, including accompanying schedules y knowledge and belief, it is true, correct, and complete. Declaration of preparer (other than taxpay	and state er) is bas	ements, and to the ed on all informatio	best on of
Sign	whic	h preparer has any knowledge.			
Here			- [4]-1] -	OTIL	
		Date Spouse's signature (if filin,			
Paid	Prepa signa	arers self-em-			, 110.
Preparer's	Firm	's name (or F.I. No. I	<u></u>	I	
USE UNIY	your: and	address ZIP code	·	· · · · · · · · · · · · · · · · · · ·	
					_

USER INSTRUCTIONS

INST	TRUCTIONS	INPUT	KEYSTROKES	DISPLAY
1.	At a minimum, load the following programs: "FT" (form 1040) "T2" ('82 tax tables) or "T3" ('83 tax tables) "O" (misc. routines).		[shift][GTO] [shift][GTO] [shift][GTO]	
2.	Allocate data registers (minimum 29).		[XEQ] "SIZE" 029	
3.	Select an appropriate display format.		[shift][FIX] n	
4.	Select either "prompting" (flag O set) or "non- prompting" (flag O clear) mode. Pressing [XEQ] "P" toggles between these modes.		[XEQ] "P"	
5.	Run the 1040 program.		[XEQ] "FT"	FORM 1040
6.	This display identifies the program.		[R/S]*	STATS: X
7.	Enter one of lines 1–5: your filing status.	status	[R/S]	EXMPT: X
8.	Enter line 6e: total number of exemptions claimed.	exemptions	ER/S]	WAGES: X
9.	Enter line 7: Wages, salaries, tips, etc.	wages	ER/S]	INT : ×
10.	Enter line 8: interest income.	interest	[R/S]	DIVID: ×
11.	Enter line 9a: dividends.	dividends	[R/S]	EXCLN: ×
12.	Enter line 9b: exclusion.	exclusion	[R/S]	NETDV= x
13.	Output line 9c, the dif- ference between lines 9a and 9b.		[R/S]*	STRFD: ×
14.	Enter line 10: State and local income tax refunds.	refunds	ER/S]	SCH C: ×

INSTRUCTIONS		INPUT	KEYSTROKES	DISPLAY	
15.	Enter line 12: business income or lss. (+ or -)	bus. inc.	[R/S]	SCH C: X	
16.	Enter line 13: capital gain or loss. (+ or –)	cap. gain	[R/S]	SCH E: X	
17.	Enter line 18: rents, royalties, partnerships, estates, trusts, etc.	rents, etc.	[R/S]	OTHIN: ×	
18.	Enter line 21: other income.	other inc.	[R/S]	TOTIN= x	
19.	Output line 22: total income.		[R/S]*	EXPNS: x	
20.	Enter line 23: moving expense.	expense	[R/S]	IRA : ×	
21.	Enter line 25: payments to an IRA.	IRA payment	[R/S]	SCH W: x	
22.	Enter line 29: Deduction for a married couple when both work.	deduction	[R/S]	TOTAD= x	
23.	Output line 31: total adjustments to income.		[R/S]*	AGI = x	
24.	Output of line 32: adjusted gross income.		[R/S]*	SCHED A ?	
25.	This query comes up in ALPHA mode. Pressing "Y" causes the program to try to execute the Schedule A pro- gram (see Schedule A pro- gram instructions). Any other response continues the current program.	"Y" or any	ER/S]	DEDCT: X	
26.	Enter line 34a: itemized deductions. If the Schedule A program was not run, this is a prompt for input. If the Schedule A program was run, the program returns to 1040 at this point and this value will be output (i.e., "DEDCT= x").	deductions	ER/S]	LIN35= x	

INS	TRUCTIONS		KEYSTROKES	DISPLAY	
27.	Output line 35: the difference between lines 33 and 34.		[R/S]*	EXMP\$= x	
28.	Output line 36: line 4e x 1000.		[R/S]*	TXABL= x	
29.	Output line 37: taxable income.		[R/S]*	TX82T= x	
30.	Output line 38, 1982 tax. If program "T3" were loaded instead of "T2" the line name would read "83" instead of "82". The final "T" indicates that the value was extracted from the tax tables. If the tables could not be used, the "T" would be omitted.		[R/S]*	SCHED G ?	
31.	This query comes up in ALPHA mode. Pressing "Y" causes the program to try to execute the Schedule G program. Any other response continues the current program. If the Schedule G program was run, control returns to the current program at the User Instruction step 32.	"Y" or any	[R/S]	CRDIT: ×	
32.	Enter line 49: total credits.	total	[R/S]	NETTX= x	
33.	Output line 50: the difference between lines 40 and 49.		[R/S]*	OTHTX: ×	
34.	Enter the total of lines 51 through 58.	total	[R/S]	TOTTX= x	
35.	Output line 59: total tax, the sum of lines 50 through 58.		[R/S]*	TOTPD: X	
36.	Enter line 67: total tax paid, the sum of lines 60 through 66.	paid	[R/S]	BLDUE= x	

INSTRUCTIONS	INPUT	KEYSTROKES	DISPLAY	DISPLAY	
37. Output line 71: the amount you owe. If line 67 were greater than line 59, this					
amount overpaid, and would read "REFND= x". 38. This is a superfluous valu left in the X-register.	le l	[R/S]*	x		

* [R/S] in this instance is not necessary if a printer is attached.

PROGRAM DETAIL -

The form 1040 program is 159 steps and 438 bytes (62.6 registers) long. It requires two other programs, one of the tax table programs and the miscellaneous routines programs. The two tax programs are 332 and 355 bytes each while the routines program is 233 bytes. At a minimum, 29 data registers are needed, totalling 172.3 or 175.6 registers for operation.

The program has one entry point, global label "FT".

Aside from the flags manipulated by the subroutines called, the program itself manipulates the following flags:

The following data registers are used:

```
00 = register index for data manipulation
01 = lines 1 through 5: filing status
O2 = line 6e: total number of exemptions claimed
O3 = line 7: wages, salaries, tips, etc.
04 = line 8: interest income
05 = line 9a: dividends
O6 = line 9b: exclusion
07 = line 10: refunds from state and local income tax
O8 = line 12: business income or loss
09 = line 13: capital gain or loss
10 = line 18: rents, royalties, partnerships, estates, trusts, etc.
11 = line 21: other income
12 = line 22: total income
13 = line 23: moving expenses
14 = line 25: payments to IRA
15 =  line 29: deduction for married couple when both work
16 = line 31: total adjustments
17 = line 32: adjusted gross income
18 = line 34: itemized deductions
19 = line 35: line 33 (32) minus line 34
20 = line 36: line 4e (exemptions) * 1000
21 = line 37: taxable income (line 36 from 35)
22 = line 38: tax
23 = line 49: total credits
24 = \text{lines } 51 \text{ through } 58: \text{ other } \text{tax}
25 = line 59: total tax
26 = line 67: total paid
27 = pointer to a register where a total is currently being
     accumulated
28 = used by tax rate routines (see appropriate routine)
```

PROGRAM LISTING

LISTING	COMMENTS	LISTING	COMMENTS
01+LBL "FT"	•	52 X<>Y	
02 SF 12 P	orint double wide	53 -	line 22 - line 31
03 12 ^r	eg. to sum in	54 STO 17	
04 "FORM 10 ^t	tle	55 XEQ "X" 🔍	output AGI
40"	• • • • •	56 ADV	
05 XEQ "U" '	nit. routine	57 "A" s	schedule A
06 XEQ "Z" s	status prompt	58 XEQ "Q" I	run schedule A?
07 "EXMPT"		59 "DEDCT"	
08 XEQ "Z" e	exemption prompt	60 FC? 10 r	no schedule A?
09 ADV		61 XEW "2" (deduction prompt
10 "WHGES"		62 FU?U 10 1	no schedule A?
11 XEQ "Y" W	vage prompt & sum	53 GIU 07 - 9 74 950 - 99	skip output
12 "INI "		64 XEW "X" (output deductions
13 XEQ "Y" I	nt. prompt & sum	60 HUY 60 YEA "A"	
14 "DIVID" 15 VEO "7"	level and manual	27 ΟΠU (divide printer
10 AEM 2 (12 "EVALM"	ividend prompt	68 H BI 07	output
10 EAULN 17 VEO "7" .		69 "I IN75"	from step 63
10 "NETDV"	exclusion prompt	70 XEO "S" ,	
19 SE 06	a atoma UCU	71 "FXMP\$"	R17 - R18
20 SE 08	io store "S"	72 RCI 02	
21 XEQ "S"	NO INCREMENT "S"	73 RND	recall exemptions
22 "STRED"	στράτ κυσ-κυσ	74 1 F3	
23 XFQ "Y" s	state refund	75 *	000 * exemptions
24 "SCH C"	prompt & sum	76 STO 20	······································
25 XEQ "Y" \$	chedule C	77 XEQ "X" (output line 20
26 "SCH D"	prompt & sum	78 "TXABL"	
27 XEQ "Y" s	schedule D	79 XEQ "S" p	R19 - R20
28 "SCH E"	p r ompt & sum	80 ADV	-
29 XEQ "Y" s	schedule E	81 "TAX "	if tax = 0
30 "OTHIN"	prompt & sum	82 X=0?	no taxable?
31 XEQ "Y" c	other income	83 GTO 09 🦂	skip tax calc,
32 "TOTIN"	prompt & sum	84 XEQ "W" -	find zero bracket
33 RCL 12 r	ecall total	85 X<>Y	amount
34 XEQ "X" c	output total	86 X <y?< td=""><td>taxable < zba?</td></y?<>	taxable < zba?
35 ADV		87 CLX	no tax
36 16	new sum register	88 X=0?	no tax?
37 XEQ "1" \$	store & clear new	89 610 89	skip tax calc.
38 "EXPNS"	sum register	90 LF 08 01 E E4	init. tax table
39 XEQ "1" 6	s cum	91 3 E4 83 V/NV	flag
40 IKH 41 VEG 898	G SUIII	72 ANZI 97 V≠V2	
41 AEQ 1 1	INA Prompt & Sum	94 VNV2	axable <= 50000?
42 OLT M 47 VEO "V" - 4	chedule W	95 CTO 06	
44 "TATOD"	nromnt & sum	96 ENTER*	σκιρ ταχ ταριε
45 RCI 16	ecall total adi	97 SF 08	av table
46 XFQ "X" /	utput total adi	98 1	ax Lable
47 ADV	acput total auj.	99 *	III IdSLX
48 CF 10 :	nit, schedule A	100 3 E3	
49 "AGI "	flag	101 X<=Y? t	axable >= 3000
50 RCL 12 ,	recall line 22	102 ISG L 2	2 in lastx
51 RND		103 CLD 🤇	lummy step

PROGRAM LISTING

LISTING	COMMENTS	LISTING	COMMENTS
104 RDN 105 LASTX 106 25 107 * 108 MOD 109 LASTX 110 2	taxable in x 1 or 2 25 or 50 amt over tax brkt 25 or 50	156 XEQ "X" (157 ADV 158 ADV 159 END	output ''BLDUE'' or ''REFND''
111 / 112 RDN 113 - 114 R↑ 115 + 116+LBL 06 117 XEQ "R" 118 FC? 08 119 "⊢ " 120 FC?C 08 121 GTO 09 122 "⊢T"	12.5 or 25 amt. over tax brkt base of tax brkt 12.5 or 25 mid tax brkt end of tax table get tax no tax table? omit "T" no tax table? skip rounding		
123 .5 124 + 125 INT 126+LBL 09 127 STO 22 128 XEQ "X"	add "f" unconditional round up end of tax calc. store tax output tax		
129 HDV 130 "G" 131 XEQ "Q" 132 25 133 XEQ "T" 134 "CRDIT" 135 23 136 STO 00	schedule G run schedule G? new sum register store & clear new sum register adjust index to credit register		
137 XEQ "Z" 138 ^A NETTX" 139 SF 06 140 SF 08 141 XEQ "S" 142 "OTHTX"	no store/yes sum no increment tax - credit		
143 XEQ "T" 144 "TOTTX" 145 RCL 25 146 XEQ "X" 147 "TOTPD" 148 XEQ "Z" 149 "BLDUE"	sum & sum recall other tax output other tax orompt total paid		
150 RCL 25 151 RND 152 - 153 X>0? 154 "REFND" 155 ABS	total tax paid – total tax more paid? positive output		

PROGRAM REGISTERS NEEDED: 63

HEWLETT-PACKARD SOLUTION BOOK: 1982 TAXES



FT

HEWLETT-PACKARD SOLUTION BOOK: 1982 TAXES



PROGRAM DESCRIPTION

SCHEDULE A ITEMIZED DEDUCTIONS

PURPOSE -

The purpose of this program is to aid the user in itemizing deductions using Schedule A.

FEATURES/WARNINGS -

The program is relatively straightforward in its operation. Once begun, it steps through the tax form displaying values it assumes to be correct for each line of the form.

Lines that require input from the user are denoted by a colon (":") between the line name (a string of five characters) and the current line value (some number). An example of a line of this type is "STATS: 2.", where "STATS" is an abbreviation for "Filing Status", the colon indicates that this is a userspecified value, and the "2." is the current value. At any time the user encounters a program display similar to the one just described, its line value may be used as is by pressing [R/S] (to continue the program) or may be changed by keying in some new value (using the numeric keys) and pressing [R/S] (to continue the program). Manual calculations may be performed at this time using the HP-41's stack in order to arrive at the desired value to be input.

Lines that represent values calculated by the program, and which should be copied to the form, are denoted by an equal sign ("=") between the line name and the line value. An example of this is "1%AGI= 364.", where "1%AGI" is an abbreviation for "one percent of your adjusted gross income", the equal sign indicates that this is a program-calculated value, and "364." is the current line value. At any time a program display similar to the one just described is encountered, its line value MUST NOT be changed by the user (i.e., by pressing any key other than [R/S]), or the program may perform calculations based on the altered (and incorrect) value.

Not all Schedule A lines have been included in the program. The lines omitted have been so in order to leave space in the computer for other programs from this package. The lines omitted were chosen because of their (hopefully) limited use. If the user finds that he/she requires one of the omitted items, in all cases the value may be added into a neighboring, existing line item with no ill effect on the "bottom line" results. For example, all items under "Contributions" can be totalled by the user and added to line 23.

The following Schedule A lines have been omitted but may be combined with neighboring lines if needed:

Line 13b: general sales on motor vehicles Line 20: cash contributions Line 21: contributions other than cash Line 22: carryover from prior years

The program works equally well in any display mode (FIX, SCI, ENG, O through 9), but best results will be obtained using either FIX O or 2 which correspond to whole dollar amounts and dollars-and-cents amounts respectively. Money values may be entered in either fashion regardless of the display mode and will be remembered by the program exactly as they are input. However, the display mode does have an effect on the program's output. All output values will be generated using the input values rounded to the current display mode (viz., an input of 9.25 in FIX O will be rounded to 9 before it is used in a calculation whereas the same value in FIX 2 will not be altered), and will cause small but perhaps significant deviations in output. The fact that the values are retained exactly as input allows the user to rerun the program with no new inputs in another display mode and quickly see the difference between whole dollar and dollars-and-cents input.

The Schedule A program can be run on its own independent of any programs other than the "common routines" program. It may also be "called" from the 1040 program to complete Schedule A in the process of completing form 1040. If the latter occurs, certain line information will be assumed to have been input or calculated by the calling program. In other words, the Schedule A program will run a little differently (omitting certain inputs, treating others as outputs) when called than when run on its own. These differences will be detailed in the User Instructions.

The program does no error checking! All input values are assumed to be correct, regardless of their values, and are used as such. Erroneous values will usually not halt the program. The program may either be run to completion, or manually halted and restarted. Either way, the valid inputs may be skipped by pressing [R/S] and the invalid inputs corrected by entering the proper value when the line is displayed.

The program is compatible with printers. If a printer is attached, the program assumes it is on. All input values are echoed and all output values are streamed to the printer. With respect to the user, input values are treated in the same fashion regardless of the printer's presence. The output of program-generated values, on the other hand, differs dramatically based on the printer's existence. Without a printer, the program halts at each output value in the same fashion that it does when asking for input, thus allowing the user to manually record the value. With a printer, program-generated output does not halt program execution, is not displayed and is recorded on the printer, thus minimizing user interaction.

One feature of the program allows the user to skip all input prompts if the existing values are known to be correct. In this mode, the user without a printer may view only those lines calculated by the program. The user with a printer may rapidly generate an uninterrupted printout of both input and output. This mode is active when the flag O annunciator is lit in the display.

SAMPLE PROBLEM

Fill out the form on page 22.

The example assumes:

- * that programs "SA" (Schedule A) and "O" (common subroutines) have been loaded into memory.
- * there are 51 available data registers (i.e., SIZE has been set to a number greater than 50).
- * the program is in "input mode." This is accomplished by pressing [XEQ] "P" repeatedly (no more than twice is necessary) until the annunciator for flag O cannot be seen in the display.
- * all pertinent data registers contain the value O. This is only for convenience in describing the example and is not required. If the user desires to duplicate the example exactly, and is certain that no important data will be destroyed, the computer's CLRG function may be employed to clear data memory (via [XEQ] "CLRG").
- * the display mode is FIX O.
- * flags 28 and 29 are set (the HP-41 decimal point and digit grouping flags).

DISPLAY	INPUT	KEYSTROKES	COMMENTS
		[XEQ] "SA"	
SCHEDULE A		[R/S]*	Identifies the program.
STATS: O.	2	[R/S]	Lines 1–5 of form 1040: filing status. If this program was called from the 1040 program, this prompt will be skipped.
AGI : O.	36444	ER/S]	Line 33 from form 1040: adjusted gross income. If this program was called from the 1040 program, this prompt will be skipped.
DRUGS: 0.	412	[R/S]	Line 1: medicine and drugs.
1%AGI= 364.		ER/S]	Line 2: 1% of line 33 form 1040.
LINE3= 48.		[R/S]*	Line 3: line 2 from line 1.
MDINS: O.	372	[R/S]	Line 4: total medical ins. premiums paid for medical and dental.

SOLUTION

DISPLAY	ſ	INPUT	KEYSTROKES	COMMENTS
======		=======================================	=======================================	
DCTRS:	0.	878	[R/S]	Line 5a: doctors, dentists, nurses, bospitals, etc.
TRNSP:	0.	49	[R/S]	Line 5b: transportation.
OTHER:	0.	89	[R/S]	Line 5c: other medical
				expenses.
LINE6=	1,436.		ER/S]*	Line 6: add lines 3 through 5c.
3%AGI=	1,093.		ER/S]*	Line 7: 3% of line 33 form 1040.
LINE8=	343.		[R/S]*	Line 8: line 7 from line 6.
LINE9=	150.		[R/S]*	Line 9: half of line 4 <= 150
TOTMD=	343.		ER/S]*	Line 10: larger of lines 8 and 9.
SLITX:	0.	1373	ER/S]	Line 11: state and local
				income tax.
RESTX:	0.	833	[R/S]	Line 12: real estate tax.
SLSTX:	0.	325	[R/S]	Line 13: sales tax.
OTHER:	0.		ER/S]	Line 14: other taxes.
TOTTX=	2,531.		[R/S]*	Line 15: total tax.
MORTG:	0.	2377	ER/S]	Line 16: home mortgage
				interest paid to financial institutions.
CDTCD:	0.	62	ER/S]	Line 17: credit cards and
				charge accounts.
OTHER:	0.		ER/S]	Line 18: other interest
				expenses.
TOTIN=	2,439.		[R/S]*	Line 19: total interest
	•			expense.
CNTRB:	0.	560	ER/S]	Line 23: total contributions.
CSLTY:	0.		ER/S]	Line 24: total casualty or
				theft loss.
DUES :	0.	150	ER/S]	Line 25a: union and
				professional dues.
TXPRP:	0.	40	ER/S]	Line 25b: tax preparation
				fee.
OTHER:	0.	44	[R/S]	Line 26: other miscellaneous deductions.
TOTMS=	234.		[R/S]*	Line 27: total misc. losses and deductions.
GRDED=	6,107.		[R/S]*	Line 28: gross deductions.
ZBRAM=	3,400.		[R/S]*	Line 29: zero bracket amount.
DEDCT=	2,707.		[R/S]*	Line 30: adjusted deductions.
				If this program was called
				from the 1040 program,
				control will be passed back
				to that program after this
				display.
2,707.				Superfluous number left in
-				the X-register.

* [R/S] in this instance is not necessary if a printer is attached.

Schedules A&B	
(Form 1040)	
Department of the Treasury Internal Revenue Service	(0)

Schedule A—Itemized Deductions

(Schedule B is on back)

OMB No. 1545-0074 0 Ζ

▶ Attach to Form 1040. ▶ See Instructions for Schedules A and B (Form 1040).

Name(s) as shown on Form 1040

07 Your social security number

1 J

Medical and	1 Medicines and drugs					
Dental Expenses	2 Write 1% of Form 1040, line 33 2 364			<u> ////////////////////////////////////</u>		
(Do not include	3 Subtract line 2 from line 1. If line 2 is more than line 1, write zero .	_3_	48			
expenses reim-	${\bf 4}$ Total insurance premiums you paid for medical and dental care .	_4_	372	.		
bursed or paid	5 Other medical and dental expenses:					
by others.)	a Doctors, dentists, nurses, hospitals, etc	<u>5a</u>	878	-		
(See page 17 of	b Transportation	<u> </u>	<u> 4 y</u>			
mstructions.)	c Other (list—include hearing aids, dentures, eyeglasses, etc.)					
	Eqe glasses for DAVE	50	80			
	6 Add lines 2 through Eq.	6	1.436	·		
	7 Multiply amount on Form 1040 line 33 by 39/ (03)	7	1.093			
	8 Subtract line 7 from line 6. If line 7 is more than line 6 write zero	8	343			
	9 Write one-half of amount on line 4, but not more than \$150	9	150		<i></i>	<i>'/////</i> //
	10 COMPARE amounts on line 8 and line 9, and write the LARGER and	nount	here 🕨	10	343	
Taxes	11 State and local income	11	1,373			
(See page 18 of	12 Real estate	12	833			
Instructions.)	13 a General sales (see sales tax tables)	13a	325	.		
	b General sales on motor vehicles	<u>13b</u>				
	14 Other (list—include personal property)		~			
	15 Add lines 11 through 14 Write your prover here	14		15	2531	
Interest Frances	15 Add mies 11 through 14. white your answer here.	162	2.277	15		//////
Interest Expense	b Home mortgage interest paid to financial institutions	100				
(See page 19 of Instructions.)	son's name and address)					
,		16b				
	17 Credit cards and charge accounts	17	62			
	18 Other (list)					
		18	0		7430	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	19 Add lines 16a through 18. Write your answer here	· · ·	🕨	19		'//////
Contributions	20 a Cash contributions. (If you gave \$3,000 or more to any one or-	202				
(See page 19 of	ganization, report those contributions on line 20b.)	<u>20a</u>				
mstructions.)	zation (Show to whom you gave and how much you gave)					
	·	20b				
	21 Other than cash (see page 19 of Instructions for required statement)	21				
	22 Carryover from prior years	22	560			'//////
	23 Add lines 20a through 22. Write your answer here			23		·//////
Casualty and	24 Total casualty or theft loss(es) (attach Form 4684)	24		.		
Miscellaneous	25 a Union and professional dues	258 25h	40	.		
Deductions	b Tax return preparation tee	250				A
(See page 20 of				1		
Instructions.)		26	44			
	27 Add lines 24 through 26. Write your answer here		🕨	27	234	
Summary of					1107	
Itemized Deductions	28 Add lines 10, 15, 19, 23, and 27			28	6,101	
Deductions	2 or 5, write \$3,400 .	•]		20	3.400	
(See page 20 of Instructions.)	29 If you checked Form 1040, Filing Status box { 1 or 4, write \$2,300 . 3. write \$1.700	: }	· · · ·	29		
	30 Subtract line 29 from line 28 Write your answer here and on Form	1040	line 34a (If			
	line 29 is more than line 28, see the Instructions for line 30 on pa	ge 20).))	30	2,107	

For Paperwork Reduction Act Notice, see Form 1040 Instructions.

USER INSTRUCTIONS

INS	TRUCTIONS	INPUT	KEYSTROKES	DISPLAY
1)	At a minimum, load the following programs: "SA" (Schedule A) "O" (misc. routines).		[shift][GTO] [shift][GTO]	
2)	Allocate data registers (minimum 51).		[XEQ] "SIZE" 051	
3)	Select an appropriate display format.		[shift][FIX] n	
4)	Select either "prompting" (flag O set) or "non-prompt- ing" (flag O clear) mode. Pressing [XEQ] "P" toggles between these modes.		[XEQ] "P"	
5)	Run the Schedule A program.		EXEQ] "SA"	SCHEDULE A
6)	This display identifies the program.		[R/S]*	STATS: ×
7)	Enter one of lines 1-5: your filing status. If this program was called from the 1040 program, this prompt will be skipped.	status	ER/S]	AGI : ×
8)	Enter line 33 from form 1040: adjusted gross income. If this program was called from the 1040 program, this prompt will be skipped.	agi	[r/s]	DRUGS: ×
9)	Enter line 1: medicine and drugs.	drugs	[R/S]	1%AGI= ×
10)	Output line 2: 1% of line 33 form 1040.		[R/S]*	LINE3= ×
11)	Output line 3: line 2 from line 1.		[R/S]*	MDINS: ×
12)	Input line 4: total medical ins. premiums paid for medical and dental.	insurance	ER/S]	DCTRS: X
13)	Input line 5a: doctors, dentists, nurses, hospi- tals, etc.	doctors	[R/S]	TRNSP: X

INS	TRUCTIONS	INPUT	KEYSTROKES	DISPLAY	
14.	Input line 5b: transportation.	transport.	[r/s]	OTHER: X	
15.	Input line 5c: other medical expenses.	other exp.	[R/S]	LINE6= x	
16.	Output line 6: add lines 3 through 5c.		[R/S]*	3%AGI= x	
17.	Output of line 7: 3% of line 33 form 1040.		[R/S]*	LINE8= x	
18.	Output of line 8: line 7 from line 6.		[R/S]*	LINE9= x	
19.	Output of line 9: half of line 4 <= 150.		[R/S]*	TOTMD= x	
20.	Output of line 10: the larger of lines 8 and 9.		[R/S]*	SLITX: ×	
21.	Enter line 11: state and local income tax.	state tax	[R/S]	RESTX: X	
22.	Enter line 12: real estate tax.	re. es. tax	[R/S]	SLSTX: ×	
23.	Enter line 13: sales tax.	sales tax	ER/SJ	OTHER: x	
24.	Enter line 14: other taxes.	other tax	[R/S]	TOTTX= x	
25.	Output of line 15: total tax.		[R/S]*	MORTG: x	
26.	Input line 16: home mortgage interest paid to financial institutions.	mort. int.	[R/S]	CDTCD: X	
27.	Input line 17: credit cards and charge accounts.	credit card	[R/S]	OTHER: x	
28.	Enter line 18: other interest expenses.	other exp.	[R/S]	TOTIN= x	
29.	Output of line 19: total interest expense.		[R/S]*	CNTRB: x	
30.	Enter line 23: total contributions.	contrib.	[r/s]	CSLTY: X	

INS	TRUCTIONS	INPUT	KEYSTROKES	DISPLAY
===:		===============================	=======================================	
31.	Enter line 24: total casualty or theft loss.	casualty	[R/S]	DUES : x
32.	Enter line 25a: union and professional dues.	dues	[R/S]	TXPRP: x
33.	Enter line 25b: tax preparation fee.	tax prep.	[R/S]	OTHER: x
34.	Enter line 26: other miscellaneous deductions.	other misc.	ER/S]	TOTMS= x
35.	Output of line 27: total miscellaneous deductions.		[R/S]*	GRDED= x
36.	Output of line 28: gross deductions.		[R/S]*	ZBRAM= x
37.	Output of line 29: zero bracket amount.		[R/S]*	DEDCT= ×
38.	Output of line 30: adjusted deductions. If this program was called from the 1040 program, control will be passed back to that program after this display.		[R/S]*	×
39.	This is a superfluous value left in the X-register.			

* [R/S] in this instance is not necessary if a printer is attached.

PROGRAM DETAIL -

The form Schedule A program is 142 steps and 432 bytes (61.7 registers) long. It requires one other program: the miscellaneous routines program--233 bytes. At a minimum, 51 data registers are needed, totalling 146 registers for operation.

The program has two entry points, global labels "SA" and "AS". Label "SA" is the user entry point. When the user desires to run the program independent of the 1040 program, this label is accessed. Label "AS" is the entry point for the 1040 program.

Aside from the flags manipulated by the subroutines called, the program itself manipulates the following flags:

The the data registers used by the form 1040 program are preserved with the exception of registers 1, 17 and 18. These registers are not modified if the program is called from the 1040 program, but can be if the program is run on its own. The following data registers are used:

00 = register index for data manipulation O1 = lines 1 through 5, form 1040: filing status 17 = line 32, form 1040: adjusted gross income 18 = line 33, form 1040: deductions 29 = Line 1: medicines and drugs 30 = Line 4: total insurance premiums paid 31 = Line 5a: doctors, dentists, nurses, hospitals, etc. 32 = Line 5b: medical transportation 33 = Line 5c: other medical expenses 34 = Line 6: total medical expenses 35 = Line 11: state and local income tax 36 = Line 12: real estate tax 37 = Line 13: sales tax 38 = Line 14: other taxes 39 = Line 15: total tax 40 = Line 16: home mortgage interest paid 41 = Line 17: credit cards and charge accounts 42 = Line 18: other interest expenses 43 = Line 19: total interest expense 44 = Line 23: total contributions 45 = Line 24: total casualty or theft loss 46 = Line 25a: union and professional dues 47 = Line 25b: tax preparation fee 48 = Line 26: other miscellaneous deductions 49 = Line 27: total miscellaneous deductions 50 = Line 28: total itemized deductions

PROGRAM LISTING

01+LBL "SA" user entry point 52 "LINE8" 02 CF 10 not a subroutine 53 SF 06 no store 03 SF 12 double wide print 54 XEQ "S" line 7 from 6 04 GTO 00 to step 09 55 "LINE9" line 7 from 6 05+LBL "AS" sub. entry point 56 RCL 34 line 6 06 SF 10 subroutine flag 57 RND line 6 07 CF 12 print single wide 58 2 line 6 08 XEQ "O" print divider 59 / 0 09+LBL 00 60 150 line 8 line 9 10 34 sum register 61 X>Y? output line 9 12 XEQ "U" initialize 64 "TOTMD" line 8 13 FC? 10 subroutine? 65 RCL Z line 8 14 XEQ "Z" status prompt 66 X <y?< td=""> line 8 line 9? 15 17 AGI register 67 X<>Y line 10 line 10 18 FC? 10 subroutine? 70 ADV pack 4 registers 19 XEQ "Z" AGI prompt 71 4 back 4 registers 20 FC? 10 subroutine? 72 ST- 00 back</y?<>	LISTING	COMMENTS	LISTING	COMMENTS
04GTO00to step 0955"LINE9"05+LBL "AS"sub. entry point56RCL34line 606SF10subroutine flag57RND07CF12print single wide58208XEQ "O"print divider59/09+LBL00601501034sum register611034sum register611034sum register6211"SCHEDUL62EA"6312XEQ "U"initialize13FC?1014XEQ "Z"status prompt16STO0017AGI register6717AGI register6817AGI prompt7119XEQ "Z"AGI prompt20FC?10subroutine?7220FC?10subroutine?7234back 4 registers	01+LBL "SA" (02 CF 10) 07 SE 12 /	user entry point not a subroutine	52 "LINE8" 53 SF 06 n 54 YEO "S" 1	o store ine 7 from 6
05+LBL "AS" sub. entry point 56 RCL 34 line 6 06 SF 10 subroutine flag 57 RND 07 CF 12 print single wide 58 2 08 XEQ "O" print divider 59 / 09+LBL 00 60 150 10 34 sum register 61 X>Y? 11 "SCHEDUL 62 X<>Y E A" 63 XEQ "X" output line 9 12 XEQ "U" initialize 64 "TOTMD" 13 FC? 10 subroutine? 65 RCL Z line 8 14 XEQ "Z" status prompt 66 X <y?< td=""> line 8 < line 9?</y?<>	03 3F 12 0	to step 09	55 "LINE9"	
06 SF 10 subroutine flag 57 RND 07 CF 12 print single wide 58 2 08 XEQ "O" print divider 59 / 09+LBL 00 60 150 10 34 sum register 61 X>Y? 11 "SCHEDUL 62 X<>Y E A" 63 XEQ "X" output line 9 12 XEQ "U" initialize 64 "TOTMD" 13 FC? 10 subroutine? 65 RCL Z line 8 14 XEQ "Z" status prompt 66 X <y?< td=""> line 8 < line 9?</y?<>	05+LBL "AS"	sub. entry point	56 RCL 34 1	ine 6
07 CF 12 print single wide 58 2 08 XEQ "O" print divider 59 / 09+LBL 00 60 150 10 34 sum register 61 X>Y? 11 "SCHEDUL 62 X<>Y E A" 63 XEQ "X" output line 9 12 XEQ "U" initialize 64 "TOTMD" 13 FC? 10 subroutine? 65 RCL Z line 8 14 XEQ "Z" status prompt 66 X <y?< td=""> line 8 15 17 AGI register 67 X<>Y line 8 16 STO 00 reset pointer 68 STO 50 line 10 17 "AGI " 69 XEQ "X" line 10 line 10 18 FC? 10 subroutine? 70 ADV back 4 registers 19 XEQ "Z" AGI prompt 71 4 back 4 registers 20 FC? 10 subroutine? 72 ST- 00 back 4 registers</y?<>	06 SF 10 s	subroutine flag	57 RND	
08 XEQ "0" print divider 59 / 09+LBL 00 60 150 10 34 sum register 61 X>Y? 11 "SCHEDUL 62 X<>Y E A" 63 XEQ "X" output line 9 12 XEQ "U" initialize 64 "TOTMD" 13 FC? 10 subroutine? 65 RCL Z line 8 14 XEQ "Z" status prompt 66 X <y?< td=""> line 8 < line 9?</y?<>	07 CF 12	orint single wide	58 2	
10 34 sum register 61 X>Y? 11 "SCHEDUL 62 X<>Y E A" 63 XEQ "X" output line 9 12 XEQ "U" initialize 64 "TOTMD" 13 FC? 10 subroutine? 65 RCL Z line 8 14 XEQ "Z" status prompt 66 X <y?< td=""> line 8 line 9? 15 17 AGI register 67 X<>Y line 8 line 9? 16 STO 00 reset pointer 68 STO 50 17<"AGI<"</y?<>		print divider	59 / / 0 150	
11SCHEDUL62X<>YEA"63XEQ"X"12XEQ"U"initialize64"TOTMD"13FC?10subroutine?65RCLZ14XEQ"Z"status prompt66X <y?< td="">line1517AGI register67X<>Y16STO00reset pointer68STO5017"AGI69XEQ"X"line1018FC?10subroutine?70ADVback4 registers19XEQ"Z"AGI prompt714back4 registers20FC?10subroutine?72ST-00</y?<>	10 34	um rogistor	60 IJ0 61 XXY2	
E A" 63 XEQ "X" output line 9 12 XEQ "U" initialize 64 "TOTMD" 13 FC? 10 subroutine? 65 RCL Z line 8 14 XEQ "Z" status prompt 66 X <y?< td=""> line 8 < line 9?</y?<>	11 "SCHEDUL	sum regiscer	62 X<>Y	
12 XEQ "U" initialize 64 "TOTMD" 13 FC? 10 subroutine? 65 RCL Z line 8 14 XEQ "Z" status prompt 66 X <y?< td=""> line 8 < line 9?</y?<>	E A"		63 XEQ "X" o	utput line 9
13 FC? 10 subroutine? 65 RCL 2 line o 14 XEQ "Z" status prompt 66 X <y?< td=""> line 8 < line 9?</y?<>	12 XEQ "U"	initialize	64 "TOTMD"	:
14 XEQ "Z" status prompt 66 X <y?< td=""> The 6 < The 9?</y?<>	13 FC? 10 s	subroutine?	65 RCL Z	ine $8 \neq 1$ inc. 9^2
15 17 AGI register 67 X<>Y 16 STO 00 reset pointer 68 STO 50 17 "AGI 69 XEQ "X" line 10 18 FC? 10 subroutine? 70 ADV 19 XEQ "Z" AGI prompt 71 4 back 4 registers 20 FC? 10 subroutine? 72 ST 00	14 XEQ "Z"	status prompt	66 X <y? '<="" td=""><td>The o < The 9!</td></y?>	The o < The 9!
10 510 00 reset pointer 68 510 30 17 "AGI " 69 XEQ "X" line 10 18 FC? 10 subroutine? 70 ADV 19 XEQ "Z" AGI prompt 71 4 back 4 registers 20 FC? 10 subroutine? 72 ST-00	15 17 / 12 CTO 00	AGI register	67 X52Y 20 сто 50	
18 FC? 10 subroutine? 70 ADV 19 XEQ "Z" AGI prompt 71 4 back 4 registers 20 FC? 10 subroutine? 72 ST 00	15 STU 00 17 "OCT "	reset pointer	68 510 J0 69 XF0 "X"]	ine 10
19 XEQ "Z"AGI prompt71 4back 4 registers20 FC? 10subroutine?72 ST-00	18 FC2 10	subroutine?	70 ADV	
20 FC? 10 subroutine? 72 ST- 00	19 XEQ "Z"	AGI prompt	714 b	ack 4 registers
	20 FC? 10	subroutine?	72 ST- 00	
21 ADV 73 39 new sum register	21 ADV		73 39 n	ew sum register
22 29 line 1 register 74 XEQ "T" store and clear	22 29	line 1 register	74 XEQ "T" s	tore and clear
23 STO 00 reset pointer 75 "SLIIX" sum register	23 STO 00	reset pointer	75 "SLIIX"	sum register
24 "DRUGS" 76 XEW "Y" line 11 prompt	24 "URUGS" 25 VEO "7"	ling 1 numer	76 XEV "Y" 77 "DECTY"	ine 11 prompt
25 AEW 2 If the iprompt 77 KESTA sum	20 AEQ 2 26 "170CI"	The prompt	79 XEO "Y" 1	& sum
27 RCL 17 AGI 79 "SLSTX" from the 12 prompt	27 RCL 17	AGI	79 "SLSTX"	rne iz prompt
28 1 80 XEQ "Y" line 13 prompt	28 1		80 XEQ "Y" 1	ine 13 prompt
29 % 81 "OTHER" & sum	29 %		81 "OTHER"	& sum
30 XEQ "X" output line 2 82 XEQ "Y" line 14 prompt	30 XEQ "X" 🧃	o utput line 2	82 XEQ "Y" 1	ine 14 prompt
31 "LINE3" 83 "TOTTX" & sum	31 "LINE3"		83 "TOTTX"	& sum
32 SF 06 don't store 84 RCL 39 total tax	32 SF 06	don't store	84 RUL 39 t	otal tax
$\begin{bmatrix} 33 \\ 74 \\ 74 \\ 74 \\ 74 \\ 74 \\ 74 \\ 74 \\$	33 XEQ 5	line 1 - line 2	80 КМД 96 СТ+ 50 а	dd to line 28
С 2 regs. back 00 311 30 dia of the 15	35 ST- 00	2 regs. back	87 XEQ "X" 0	output line 15
36 "MDINS" 88 ADV	36 "MDINS"		88 ADV	•
37 XEQ "Y" line 4 prompt 89 43 new sum register	37 XEQ "Y"	line 4 prompt	89 43 n	new sum register
38 "DCTRS" & sum 90 XEQ "T" store & clear	38 "DCTRS"	& sum	90 XEQ "T" s	store & clear
39 XEQ "Y" line 5a prompt 91 "MORTG" sum register	39 XEQ "Y"	line 5a prompt	91 "MORTG"	sum register
40 "TRNSP" & sum 92 XEQ "Y" line 16 prompt	40 "TRNSP"	& sum ling Eb prompt	92 XEQ "Y"	ine 16 prompt
$41 \times EQ = Y^{-1} \qquad \text{The 50 prompt} \qquad 93 \text{ CDTCD} \qquad 8 \text{ Sum} \qquad 42 \text{ "OTHER"} \qquad 8 \text{ Sum} \qquad 94 \times EQ = Y^{-1} \qquad \text{Line 17 prompt}$	41 XEQ "1" 42 "OTHER"	£ sum	93 "CDICD 94 XE0 "Y" 1	6 SUM
43 XEQ "Y" line 5c prompt 95 "OTHER" & sum	43 XFQ "Y"	line 5c prompt	95 "OTHER"	sum
44 "LINE6" & sum 96 XEQ "Y" line 18 prompt	44 "LINE6"	& sum	96 XEQ "Y" 1	ine 18 prompt
45 RCL 34 recall line 6 97 "TOTIN" & sum	45 RCL 34	recall line 6	97 "TOTIN"	& sum
46 XEQ "X" output line 6 98 RCL 43 line 19	46 XEQ "X" 🤄	output line 6	98 RCL 43 1	line 19
47 "3%AGI" 99 RND	47 "3%AGI"		99 RND	
48 RUL 17 AGI 100 ST+ 50 add to line 28	48 RCL 17 /	AGI	100 S(+ 50 a	add to line 28
ן איז א 101 אבע איז output line 19 האס א 102 מוע אבע איז output line 19	473 502		101 XEQ "X" C	output line 19
51 XEQ "X" output line 7 103 "CNTRB"	51 XEQ "X"	output line 7	103 "CNTRB"	

PROGRAM LISTING

LISTING	COMMENTS	LISTING	COMMENTS
104 XEQ "Z" 1 105 ST+ 50 a 106 ADV n n 107 49 n n 108 XEQ "T" s 109 "CSLTY" n n 110 XEQ "Y" n 111 "DUES n n 112 XEQ "Y" n 113 "TXPRP" n n 114 XEQ "Y" n 115 "OTHER" n n 116 XEQ "Y" n 117 "TOTMS" n n 118 RCL 49 n 119 RND n n 120 ST+ 50 a 121 XEQ "X" o 122 ADV n n 123 "GRDED" n n 124 RCL 50 n n 126 "ZBRAM" n	ine 23 prompt add to line 28 new sum register store and clear sum register line 24 prompt & sum line 25a prompt & sum line 25b prompt & sum line 26 prompt & sum line 27 add to line 28 output line 27 line 28 output line 28 output zba restore point for 1040 line 28 - line 29 deductions subroutine?		

HEWLETT-PACKARD SOLUTIONS BOOK: 1982 TAXES



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HEWLETT-PACKARD SOLUTIONS BOOK: 1982 TAXES



SA

PROGRAM DESCRIPTION

SCHEDULE G INCOME AVERAGING

PURPOSE -

The purpose of this program is to aid the user in Income Averaging using Schedule G.

FEATURES/WARNINGS -

The program is relatively straightforward in its operation. Once begun, it steps through the tax form displaying values it assumes to be correct for each line of the form.

Lines that require input from the user are denoted by a colon (":") between the line name (a string of five characters) and the current line value (some number). An example of a line of this type is "STATS: 2.", where "STATS" is an abbreviation for "Filing Status", the colon indicates that this is a userspecified value, and the "2." is the current value. At any time the user encounters a program display similar to the one just described, its line value may be used as is by pressing [R/S] (to continue the program) or may be changed by keying in some new value (using the numeric keys) and pressing [R/S] (to continue the program). Manual calculations may be performed at this time using the HP-41's stack in order to arrive at the desired value to be input.

Lines that represent values calculated by the program, and which should be copied to the form, are denoted by an equal sign ("=") between the line name and the line value. An example of this is "LIN13= 26,853.", where "LIN13" is an abbreviation for "line 13", the equal sign indicates that this is a program-calculated value, and "26,853." is the current line value. At any time a program display similar to the one just described is encountered, its line value MUST NOT be changed by the user (i.e., by pressing any key other than [R/S]), or the program may perform calculations based on the altered (and incorrect) value.

Not all Schedule G lines have been included in the program. The lines omitted have been so in order to leave space in the computer for other programs from this package. The lines omitted were chosen because of their (hopefully) limited use. If the user finds that he/she requires one of the omitted items, he/she cannot use this program to complete the form.

The following Schedule G lines have been omitted:

Line 11: income earned outside of the U.S., Line 15: premature excessive distribution penalty, Line 16: Line 15 from line 14, Line 17: community property state and separate returns, Line 18: line 17 from line 16, Line 19: copy of line 13, Line 31: tax on line 14, Line 32: tax on line 16, Line 33: line 32 from 31.

The program works equally well in any display mode (FIX, SCI, ENG, O through 9), but best results will be obtained using either FIX O or 2 which correspond to whole dollar amounts and dollars- and- cents amounts respectively. Money values may be entered in either fashion regardless of the display mode and will be remembered by the program exactly as they are input. However, the display mode does have an effect on the program's output. All output values will be generated using the input values rounded to the current display mode (viz., an input of 9.25 in FIX O will be rounded to 9 before it is used in a calculation whereas the same value in FIX 2 will not be altered), and will cause small but perhaps significant deviations in output.

The Schedule G program can be run independent of any programs other than the "common routines" program. It may also be "called" from the 1040 program to complete Schedule G in the process of completing form 1040. If the latter occurs, certain line information will be assumed to have been input or calculated by the calling program. In other words, the Schedule G program will run a little differently (omitting certain inputs, treating others as outputs) when called than when run on its own. These differences will be detailed in the User Instructions.

The program does no error checking! All input values are assumed to be correct, regardless of their values, and are used as such. Erroneous values will usually not halt the program. The program may either be run to completion, or manually halted and restarted. Either way, the valid inputs may be skipped by pressing [R/S] and the invalid inputs corrected by entering the proper value when the line is displayed.

The program is compatible with printers. If a printer is attached, the program assumes it is on. All input values are echoed and all output values are streamed to the printer. With respect to the user, input values are treated in the same fashion regardless of the printer's presence. The output of program-generated values, on the other hand, differs dramatically based on the printer's existence. Without a printer, the program halts at each output value in the same fashion that it does when asking for input, thus allowing the user to manually record the value. With a printer, program-generated output does not halt program execution, is not displayed and is recorded on the printer, thus minimizing user interaction.

One feature of the program allows the user to skip all input prompts if the existing values are known to be correct. In this mode, the user without a printer may view only those lines calculated by the program. The user with a printer may rapidly generate an uninterrupted printout of both input and output. This mode is active when the flag O annunciator is lit in the display.
SAMPLE PROBLEM

Fill out the form on page 35.

The following example assumes:

- * that programs "SG" (Schedule G), "T2" (1982 tax rate schedule)
 and "0" (common subroutines) have been loaded into memory.
- * there are 60 available data registers (i.e., SIZE has been set to a number greater than 59).
- * the program is in "input mode." This is accomplished by pressing [XEQ] "P" repeatedly (no more than twice is necessary) until the annunciator for flag O cannot be seen in the display.
- * all pertinent data registers contain the value O. This is only for convenience in describing the example and is not required. If the user desires to duplicate the example exactly, and is certain that no important data will be destroyed, the computer's CLRG function may be employed to clear data memory (via [XEQ] "CLRG").
- * the display mode is FIX O.
- * flags 28 and 29 are set (HP-41 decimal point and digit grouping flags).

DISPLAY	INPUT ============	KEYSTROKES	COMMENTS
		[XEQ] "SG"	
SCHEDULE G		[R/S]*	Identifies the program.
STATS: 0.	2	[R/S]	Lines 1-5 of form 1040:
	_		filing status. If this
			program was called from
			the 1040 program, this
			prompt will be skipped.
78INC: 0.	22350	ER/S]	Line 1: 1978 form 1040,
			line 34.
EXMPT: O.	2	ER/S]	1978 exemptions.
EXMP\$= 1,500.		[R/S]*	Line 2: 1978 exemptions * 75
NET = $20,850$.		ER/S]*	Line 3: line 2 from line 1.
79INC: 0.	25680	ER/S]	Line 4: 1979 form 1040,
			line 34.
EXMPT: 0.	2	ER/S]	1979 exemptions.
EXMP\$= 2,000.		ER/S]*	Line 5: 1979 exemptions *1000
NET = $23,680$.		[R/S]*	Line 6: line 5 from line 4.
80INC: 0.	21470	ER/S]	Line 7: 1980 form 1040,
			line 34.

SOLUTION

DISPLAY	INPUT	KEYSTROKES	COMMENTS
EXMPT: 0.	3	[R/S]	1980 exemptions.
EXMP\$= 3,000.		ER/S]*	Line 8: 1980 exemptions * 1000
NET = $18,470$.		ER/S]*	Line 9: line 8 from line 7.
81INC: 0.	26510	ER/S]	Line 10: 1981 form 1040,
			line 34.
TOTAL= 89,510.		ER/S]*	Line 12: sum of lines 3, 6,
			9, 10 and 11.
LIN13= 26,853.		[R/S]*	Line 12 * 0.3
82INC: 0.	37504	ER/S]	Line 14: 1982 form 1040, line
			34. Note that this is not
			the same number as presented
			in the example for form 1040.
			Use of that value would not
			permit income averaging.
LIN2O= 10,651.		ER/S]*	Line 13 from line 14.
LIN21= 2,130.		ER/S]*	Line 20 * 0.2
23,25= 28,983.		[R/S]*	Line 21 + line 13.
26,27= 5,308.		[R/S]*	Tax on line 25. Note that
			there is a slight delay
			before this value is
			displayed.
LIN28= 4,690.		ER/S]*	Tax on line 13. Note that
			there is a slight delay
			before this value is
			displayed.
LIN29= 618.		ER/S]*	Line 28 from 27.
LIN30= 2,472.		ER/S]*	Line 29 * 4.
SGTAX= 7,780.		ER/S]*	Line 26 + line 30.
7,780.			Superfluous number left in
			the X-register.

* [R/S] in this instance is not necessary if a printer is attached.

Schedule G

(Form 1040) Department of the Treasury (0) Internal Revenue Service

Income Averaging

► See instructions on back. ► Attach to Form 1040.

20 er

OMB No. 1545-0074

1982

Name(s) as shown on Form 1040

Your	social	security	numbe
		i -	

Figure your income for 1978-1981 Step 1

1978	1	Fill in the amount from your 1978 Form 1040 (line 34) orForm 1040A (line 10)Form 1040A (line 10)		
	2 3	Multiply your total exemptions in 1978 by \$750. 2 1,500 Subtract line 2 from line 1. If less than zero, enter zero. . . .	3	20,850
1979	4	Fill in the amount from your 1979 Form 1040 (line 34) or		
	5 6	Form 1040A (line 11)	6	23,680
1980	7	Fill in the amount from your 1980 Form 1040 (line 34) or Form 1040A (line 11) . . . <		
	8 9	Subtract line 8 from line 7. If less than zero, enter zero.	9	18,470
1981	10	Taxable income. Fill in the amount from your 1981 Form 1040 (line 34) or Form 1040A (line 12). If less than zero, enter zero	10	26,510
Total	11 12	Fill in all income earned outside of the United States or within U.S. possessions and excluded for 1978 through 1981	<u>11</u> 12	89.510
Ste	p 2	2 Figure your averageable income		07,570
		Multiply the amount on line 12 by 30% (.30)		
	13	Write in the answer	13	26,853
	14	Fill in your taxable income for 1982 from Form 1040, line 37.	14	
	15	section 72, see instructions	15	
	16	Subtract line 15 from line 14	16	
	17	If you live in a community property state and are filing a separate return, see instructions	17	
	18	Subtract line 17 from line 16. If less than zero, enter zero	18	
	19 20	Write in the amount from line 13 above	<u>19</u> 20	10,651

If line 20 is \$3,000 or less, do not complete the rest of this form. You do not qualify for income averaging.

Step 3	B Figure your tax			
	Multiply the amount on line 20 by 20% (.20)			
21	Write in the answer	21	2.130	
22	Write in the amount from line 13 above	22		
23	Add lines 21 and 22	23	28,983	
24	Write in the amount from line 17 above	24		
25	Add lines 23 and 24	25	28,983	
26	Tax on amount on line 25 (from Tax Rate Schedule X, Y, or Z)	26	5,308	
27	Tax on amount on line 23 (from Tax Rate Schedule X, Y, or Z) 27 5,308			
28	Tax on amount on line 22 (from Tax Rate Schedule X, Y, or Z) 28 4,690			
29	Subtract line 28 from line 27			
	Multiply the amount on line 29 by 4			
30	Write in the answer	30	2,472	
	If you have no entry on line 15, skip lines 31 through 33 and go to line 34.			
31	Tax on amount on line 14 (from Tax Rate Schedule X, Y, or Z) 31			
32	Tax on amount on line 16 (from Tax Rate Schedule X, Y, or Z) 32			
33	Subtract line 32 from line 31	33		
34	Add lines 26, 30, and 33. Write the result here and on Form 1040, line 38. Be sure		2 2 4	
	to check the Schedule G box on that line	34	1, 180	

For Paperwork Reduction Act Notice, see Form 1040 instructions.

USER INSTRUCTIONS

INS	TRUCTIONS	INPUT	KEYSTROKES	DISPLAY	
1)	At a minimum, load the following programs: "SG" (form 1040) "T2" ('82 tax tables) or "T3" ('83 tax tables) "O" (misc. routines).		[shift][GTO] [shift][GTO] [shift][GTO]		
2)	Allocate data registers (minimum 60).		[XEQ] "SIZE" 060		
3)	Select an appropriate display format.		[shift][FIX] n		
4)	Select either "prompting" (flag O set) or "non-prompt- ing" (flag O clear) mode. Pressing [XEQ] "P" toggles between these modes.		[XEQ] "P"		
5)	Run the Schedule G program.		EXEQ] "SG"	SCHEDULE G	
6)	This display identifies the program.		[R/S]*	STATS: X	
7)	Enter one of lines 1–5: your filing status. If this program was called from the 1040 program, this prompt will be skipped.	status	[r/s]	78INC: ×	
8)	Input line 1: 1978 form 1040, line 34.	line 34	[R/S]	EXMPT: x	
9)	Input 1978 exemptions.	exemptions	Er/S]	EXMP\$= x	
10)	Output of line 2: 1978 exemptions * 750.		[R/S]*	NET = x	
11)	Output of line 3: line 2 from line 1.		[R/S]*	79INC: ×	
12)	Input line 4: 1979 form 1040, line 34.	line 34	ER/S]	EXMPT: x	
13)	Input 1979 exemptions.	exemptions	ER/S]	EXMP\$= x	
14)	Output of line 5: 1979 exemptions * 1000.		[R/S]	NET = x	

INSTRUCTIONS		INPUT	KEYSTROKES	DISPLAY
15.	Output of line 6: line 5 from line 4.		[R/S]*	80INC: ×
16.	Input line 7: 1980 form 1040, line 34.	line 34	[R/S]	EXMPT: x
17.	Input 1980 exemptions.	exemptions	[R/S]	EXMP\$= x
18.	Output of Line 8: 1980 exemptions * 1000.		[R/S]*	NET = x
19.	Output of line 9: line 8 from line 7.		[R/S]*	81INC: ×
20.	Input line 10: 1981 form 1040, line 34.	line 34	[R/S]	TOTAL= x
21.	Output of line 12: sum of lines 3, 6, 9, 10 and 11.		[R/S]*	LIN13= x
22.	Output of line 12 * 0.3		[R/S]*	82INC: x
23.	Input line 14: 1982 form 1040, line 34. If the program was called from the 1040 program, this will be an output display.	line 34	ER/S]	LIN2O= ×
24.	Output of line 13 from line 14.		[r/s]*	LIN21= x
25.	If line 20 is less than or equal to 3000, "NG" is displayed rather than line 21. If this is the case, then you do not qualify for income averaging and the program terminates. If the program was called from the 1040 program, control is passed back to that program at this time.			
26.	Output of line $20 * 0.2$		[R/S]*	23,25= x
27.	Output of line 21 + line 13.		[R/S]*	26,27= x

INS	FRUCTIONS	INPUT	KEYSTROKES	DISPLAY
28.	Output of tax on line 25. Note that there is a slight delay before this value is displayed.		[r/s]*	LIN28= x
29.	Output of tax on line 13. Note that there is a slight delay before this value is displayed.		[R/S]*	LIN29= x
30.	Output of line 28 from 27.		[R/S]*	LIN3O= x
31.	Output of line 29 * 4.		[R/S]*	SGTAX= x
32.	Output of Line 26 + line 30.		ER/S]*	LOTAX= x
33.	If the program was called from the 1040 program, "SGTAX" is compared with the tax on line 38 of form 1040. The lower of the two values is then dis- played and returned to the 1040 program. Control passes back to the 1040 program at this time. If not called from 1040, the program terminates here with a superfluous number in the X- register.		[R/S]*	×

^{* [}R/S] in this instance is not necessary if a printer is attached.

PROGRAM DETAIL -

The Schedule G program is 126 steps and 336 bytes (47.9 registers) long. It requires two other programs: the miscellaneous routines program at 233 bytes and one of the two tax rate programs at 332 and 355 bytes. At a minimum, 60 data registers are needed, totalling 188.6 or 191.9 registers for operation.

The program has two entry points, global labels "SG" and "GS". Label "SG" is the user entry point. When the user desires to run the program independent of the 1040 program, this label is accessed. Label "GS" is the entry point for the 1040 program.

Aside from the flags manipulated by the subroutines called, the program itself manipulates the following flags:

The the data registers used by the form 1040 program are preserved with the exception of registers 1, 21 and 22. The first two registers are not modified if the program is called from the 1040 program, but can be if the program is run on its own. Register 22 is only modified if the program is called from the 1040 program and its value is greater than the calculated Schedule G tax. The following data registers are used:

```
00 = register index for data manipulation
O1 = lines 1 through 5, form 1040: filing status
21 = line 37, form 1040: taxable income
22 = line 38, form 1040: tax
51 = line 1: 1978 form 1040 line 34
52 = line 2: 1978 exemptions
53 = line 4: 1979 form 1040 line 34
54 = \text{line } 5: 1979 \text{ exemptions}
55 = line 7: 1980 form 1040 line 34
56 =  line 8: 1980 exemptions
57 = line 10: 1981 taxable income
58 = line 12: sum of lines 3, 6, 9, 10 and 11;
     line 13: line 12 * 0.3;
59 = 750;
     1000;
     lines 26, 27;
     line 34;
```

LISTING	COMMENTS	LISTING	COMMENTS
01+LBL "SG" 02 CF 04 03 SF 12 04 GTO 10	user entry point not a subroutine double wide print to step 09	52 3 E3 53 X<>Y 54 X<=Y? 55 AVIEW	
05+LBL "GS" 06 SF 04 07 CF 12 08 XEQ "O" 09+LBL 10	subroutine entry subroutine flag print single wide print divider	56 X(=Y/ 57 GTO 01 s 58 "LIN21" 59 20 60 %	kip rest of form
10 58 11 "SCHEDUL	sum register	61 XEQ "V" o 62 "23,25"	utput line 21
E G" 12 XEQ "U" 13 FC? 04	initialize not a subroutine?	63 RCL 58 64 RND 65 +	ine 13
14 XEQ "Z" 15 51 16 STO 00 17 750	status prompt line 1 reset pointer amt by which to	66 XEQ "V" o 67 XEQ "R" t 68 "26,27" 69 STO 59	utput 23, 25 ax on 23, 25
18 STO 59 19 "78" 20 XEQ 00	multiply exemps 1978 prompts	70 XEQ "V" o 71 RCL 58 1 72 XEQ "R" t	utput tax ine 13 ax on line 13
21 1 E3 22 STO 59	amt by which to multiply exemps	73 "LIN28" 74 XEQ "V" º	utput tax
23 "79" 24 XEQ 00 25 "80"	1979 prompts	75 °CLIN29 76 RCL 59 ¹ 77 RND	ine 27
26 XEQ 00 27 "81INC" 28 XEQ "Y" 29 "TOTAL" 30 RCL 58	line 10 prompt & sum line 12	78 X\2) 79 - 80 XEQ "V" o 81 "LIN30" 82 4	utput line 29
31 XEQ "V" 32 "LIN13" 33 30	output line 12	83 * 84 XEQ "V" o 85 "SGTAX"	utput line 30
34 % 35 STO 58 74 VEO "V"		86 ST+ 59 87 RCL 59	ine 30 + line 27
37 "82INC" 38 21 39 STO 00	reset pointer	89 FC? 04 n 90 GTO 01 s 91 "LOTAX"	ot a subroutine? kip final calc.
40 RCL 21 41 FS? 04 42 XEQ "X"	form 1040 txbl inc subroutine? output taxable inc	92 RCL 59 1 93 RCL 22 1 94 X>Y?	ine 34 040 tax
43 FC? 04 44 XEQ "Z" 45 "LIN20" 46 RCL 58	not a subroutine? taxable income prompt	95 X<>Y 96 STO 22 n 97 XEQ "V" o 98 GTO 01 <	ew lowest tax utput low tax kip subroutipe
47 RND 48 - 49 XEQ "V"	line 19 from line 18 output line 20	99+LBL 00 y 100 "⊢INC" 101 XEQ "Z" y	early output subroutine early income
50 ADV 51 "NG"	"no good" test	102 "EXMPT" 103 XEQ "Z" e	prompt xemption prompt

LISTING	COMMENTS	LISTING	COMMENTS
104 "EXMP\$" 105 RCL 59 e 106 * 107 XEQ "V" c 108 "NET " 109 RCL 00 110 2 111 -	exemption multi- plier output dollar exemption		
112 RCL IND ; X 113 X<>Y 114 RDN 115 X<>Y	ncome		
116 - i 117 SF 06 a 118 XEQ "V" a 119 ADV 120 RTN	ncome - exemption activate sum optio output yearly net	n	
121+LBL 01 122 ADV	common end		
123 FS?C 04 124 XEQ "O" ^S 125 ADV ^P 126 END	subroutine? print separator		

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SG

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PROGRAM DESCRIPTION

1982 AND 1983 TAX RATE SCHEDULES

PURPOSE -

The purpose of these programs is to aid the user in calculating tax on income and to provide the same function for the 1040 and Schedule G programs.

FEATURES/WARNINGS -

Lines that require input from the user are denoted by a colon (":") between the line name (a string of five characters) and the current line value (some number). An example of a line of this type is "STATS: 2.", where "STATS" is an abbreviation for "Filing Status", the colon indicates that this is a userspecified value, and the "2." is the current value. At any time the user encounters a program display similar to the one just described, its line value may be used as is by pressing [R/S] (to continue the program) or may be changed by keying in some new value (using the numeric keys) and pressing [R/S] (to continue the program). Manual calculations may be performed at this time using the HP-41's stack in order to arrive at the desired value to be input.

Lines that represent values calculated by the program, and which should be copied to the form, are denoted by an equal sign ("=") between the line name and the line value. An example of this is "TX82 = 4,823.", where "TX82 " is an abbreviation for "1982 tax", the equal sign indicates that this is a program-calculated value, and "4,823." is the current line value. At any time a program display similar to the one just described is encountered, its line value MUST NOT be changed by the user (i.e., by pressing any key other than [R/S]), or the program may perform calculations based on the altered (and incorrect) value.

The program works equally well in any display mode (FIX, SCI, ENG, O through 9), but best results will be obtained using either FIX O or 2 which correspond to whole dollar amounts and dollars-and-cents amounts respectively. Money values may be entered in either fashion regardless of the display mode and will be remembered by the program exactly as they are input. However, the display mode does have an effect on the program's output. All output values will be generated using the input values rounded to the current display mode (viz., an input of 9.25 in FIX O will be rounded to 9 before it is used in a calculation whereas the same value in FIX 2 will not be altered), and will cause small but perhaps significant deviations in output.

The tax rate schedule programs can be run independent of any programs other than the "common routines" program. They may also be "called" from the 1040 and Schedule G programs to complete. If the latter occurs, certain line information will be assumed to have been input or calculated by the calling program. In other words, the tax rate programs will run differently (omitting all inputs and generating no output displays) when called than when run on their own. These differences will be detailed in the User Instructions. The program does no error checking! All input values are assumed to be correct, regardless of their values, and are used as such. Erroneous values will usually not halt the program. The program may either be run to completion, or manually halted and restarted. Either way, the valid inputs may be skipped by pressing [R/S] and the invalid inputs corrected by entering the proper value when the line is displayed.

The program is compatible with printers. If a printer is attached, the program assumes it is on. All input values are echoed and all output values are streamed to the printer. With respect to the user, input values are treated in the same fashion regardless of the printer's presence. The output of program-generated values, on the other hand, differs dramatically based on the printer's existence. Without a printer, the program halts at each output value in the same fashion that it does when asking for input, thus allowing the user to manually record the value. With a printer, program-generated output does not halt program execution, is not displayed and is recorded on the printer, thus minimizing user interaction.

One feature of the program allows the user to skip all input prompts if the existing values are known to be correct. In this mode, the user without a printer may view only those lines calculated by the program. The user with a printer may rapidly generate an uninterrupted printout of both input and output. This mode is active when the flag O annunciator is lit in the display.

SAMPLE PROBLEM

With a filing status of 2, calculate the tax table tax on \$23,456.00.

The example assumes:

- * that programs "T2" (1982 tax rate schedule) and "0" (common subroutines) have been loaded into memory.
- * there are 29 available data registers (i.e., SIZE has been set to a number greater than 28).
- * the program is in "input mode." This is accomplished by pressing [XEQ] "P" repeatedly (no more than twice is necessary) until the annunciator for flag O cannot be seen in the display.
- * all pertinent data registers contain the value O. This is only for convenience in describing the example and is not required. If the user desires to duplicate the example exactly, and is certain that no important data will be destroyed, the computer's CLRG function may be employed to clear data memory (via [XEQ] "CLRG").
- * the display mode is FIX O.
- * flags 28 and 29 are set (the HP-41 decimal point and digit grouping flags).

DISPLAY ====================================	INPUT	KEYSTROKES	COMMENTS
		[XEQ] "T2"	
82 TAX RATE		[R/S]*	Identifies the program.
STATS: O.	2	[R/S]	Lines 1-5 of form 1040:
			filing status. If this
			program was called from
			another program, this prompt
			will be skipped.
TXABL: O.	23456	ER/S]	Line 37 form 1040. If this
			program was called from
			another program, this prompt
			will be skipped.
TX82 = 3,751.		[R/S]*	Тах

* [R/S] in this instance is not necessary if a printer is attached.

USER INSTRUCTIONS

INS	TRUCTIONS	INPUT	KEYSTROKES	DISPLAY	
1.	At a minimum, load the following programs: "T2" ('82 tax tables) or "T3" ('83 tax tables) "O" (misc. routines).		[shift][GTO] [shift][GTO]		
2.	Allocate data registers (minimum 29).		[XEQ] "SIZE" 029		
3.	Select an appropriate display format.		[shift][FIX] n		
4.	Select either "prompting" (flag O set) or "non-prompt- ing" (flag O clear) mode. pressing [XEQ] "P" toggles between these modes.		[XEQ] "P"		
5.	Run the tax rate program. or		EXEQ] "T2" EXEQ] "T3"	82 TAX RATE 83 TAX RATE	
6.	This display identifies the program.		[R/S]*	STATS: X	
7.	Enter one of lines 1–5: your filing status. If this program was called from another program, this prompt will be skipped.	status	[R/S]	TXABL: ×	
8.	Input line 37, form 1040. If the program was called from another program, this prompt will be skipped. or	line 37	[R/S]	TX82 = x TX83 = x	
9.	Output of tax.		ER/S]*	x	
10.	A superfluous value will				

be left in the X-register.

* [R/S] in this instance is not necessary if a printer is attached.

PROGRAM DETAIL -

The tax rate 1982 program is 122 steps and 332 bytes (47.4 registers) long. It requires one other program: the miscellaneous routines program at 233 bytes. At a minimum, 29 data registers are needed, totalling 109.7 registers.

The tax rate 1983 program is 129 steps and 355 bytes (50.7 registers) long. It requires one other program: the miscellaneous routines program at 233 bytes. At a minimum, 29 data registers are needed, totalling 113 registers.

The programs have two entry points, global labels "T2" or "T3" and "R". Labels "T2" and "T3" are user entry points. When the user desires to run the programs independent of another program, these labels are accessed. Label "R" is the entry point for calling programs.

Aside from the flags_manipulated by the subroutines called, the programs themselves manipulate the following flags:

The the data registers used by the form 1040 program are preserved with the exception of registers 1, 21 and 27. The first two registers are not modified if the programs are called from another program, but can be if the programs are run on their own. Register 27 is always destroyed by the programs. The following data registers are used:

> 00 = register index for data manipulation 01 = lines 1 through 5, form 1040: filing status 21 = line 37, form 1040: taxable income 27 = tax accumulator 28 = number from which tax bracket multipliers are retreved

LISTING	COMMENTS	LISTING	COMMENTS	
01+LBL "T2" 0 02 SF 12 p 03 "82 TAX	user entry point print double wide	45 XEQ 11 5 46 .4142445 5 353	step 57 nore bracket data	
RATE" 04 CLX r 05 XEQ "U"	no accumulator initialize	47 XEQ 12 48 1.06 7 49 ENTER1	step 60 nore brackets	
06 CF 10 r 07 XEQ "Z" s 08 21	not a subroutine status prompt line 37	50.551 51 XEQ 11 52 142	nore multipliers step 57 big bracket	
09 STO 00 10 "TXABL" (11 XEQ "Z"	eset pointer axable income prompt	53 XEQ 09 54 256 1 55 XEQ 09 5	step 71 bigger bracket step 71	
12 GTU 00 13+LBL "R" 14 SF 10	skip subroutine sub. entry point subroutine flag	56 GTO 10 57+LBL 11 58 STO 28	end program begin calculation store multipliers	
15+LBL 00 16 ENTER† 17 CLX	From step 12 caxable into Y clear tax accumu-	59 RDN 60+LBL 12 61 RDN	get bracket data	
18 STU 27 19 RDN 20 SF 09	lator cetrieve taxable status <> 3 (yet)	62 X<=0? 63 RTN 64 R↑	taxable exhausted? skip calculation retrieve brkt data	
21 1 E2 22 / 23 GTO IND	ather than all brackets * 100 select routine by	65 1 E2 66 * 67 FRC	extract brkt value remaining bracket	
24+LBL 01 25.2311102	status status = 1 brkt incremt data	68 X<>Y 69 LASTX 70 INT	data taxable bracket	
26 ENTER† 27 1.222123	% multiplier data	71+LBL 09 72 - 73 X>0?	<pre>taxable - bracket base taxable in/above</pre>	
28 XEQ 11 29 .2023212 1	step 57 more bracket data	74 GTO 06 75 RDN 76 CLX	this bracket calculate! destroy bracket	
30 XEQ 12 31 .3253535 374	step 60 more bracket data	77 KIN 78+LBL 06 79 10 90 ST# 28	data	
32 ENTER↑ 33 .44546 34 XEQ 11	more multipliers step 57	81 CLX 82 RCL 28 83 FRC	next multiplier multiplier data remaining data	
35 GTO 10 36◆LBL 03 37 CF 09 38 2	end program status = 3	84 X<> 28 85 INT 86 % 87 ST+ 27	restore rem. data multiplier take % of taxable over bracket	
39 * 40◆LBL 02 41◆LBL 05 42 .3421214	status = 2 status = 5 bracket data	88 RDN 89 X<>Y 90 X>0? 91 GTO 12	add to tax remaining taxable bracket data more brackets?	
3 43 ENTER↑ 44 1.222333 446	multipliers	92 X<>Y 93 RTN 94◆LBL 04	repeat remaining taxable status = 4	

LISTING	COMMENTS	LISTING	COMMENTS
95 .2321212 2	pracket data		
96 ENTER↑ 97 1.222421 ₁ 546	nultiplier data		
98 XEQ 11 99 .3132325 , 353	step 57 more bracket data		
100 XEQ 12 101 .53 102 ENTER↑	step 60 nore brackets		
103 .381 104 XEQ 11 105 106	nore multipliers step 57 pig bracket		
106 XEQ 09 107 159	step 71 last bracket		
108 XEQ 09 109+LBL 10 110 RCL 27	step /l output and end tax accumulator		
111 50 112 FS?C 09 113 ST+ X	status = 3? 100		
114 # 115 "TX82" 116 FS?C 10 117 RTN	restore magnitude of tax routine?		
118 "⊢ " 119 XEQ "X" 120 ADV 121 ADV 122 END	output tax		

LISTING	COMMENTS	LISTING	COMMENTS
01+LBL "T3"	user entry point	46 1.122224	
02 3F 12 07 07 TOV	print double wide	340 47 VEO 11	step 62
03 03 IHA DATE"		47 XEW 11 40 4142445	more bracket data
	no accumulator	48 .4142443	more pracket data
05 XEQ "11"	initialize	3J3 49 VEN 12	step 65
06 CE 10	not a subroutine	47 ACQ 12 50 1 06	more brackets
07 XFQ "Z"	status prompt	51 ENTER†	more brackers
08 21	line 37	52 .5442	more multipliers
09 STO 00	reset pointer	53 XEQ 11	step 62
10 "TXABL"	taxable inc prompt	54 142	big bracket
11 XEQ "Z"		55 XEQ 09	step 76
12 GTO 00	skip subroutine	56 256	bigger bracket
13+LBL "R"	sub. entry point	57 XEQ 09	step 76
14 SF 10	subroutine flag	58 238	last bracket
15+LBL 00	from step 12	59 XEQ 09	step 76
16 ENTERT	taxable into Y	60.5442	
	clear tax accumu-	61 GIU 10	end program
	lator	62+LBL 11	begin calculation
17 KDN 20 CE 09	retrieve taxable	63 510 20 24 DDN	store multipliers
20 31 02 21 1 F2	status <> 3 (yet)	64 KDN 6541 RI 12	get bracket data
22 /	brackets * 100	66 RIN	
23 GTO IND	select routine	67 X<=0?	get taxable
01	by status	68 RTN	taxable exhausted?
24+LBL 01	status = 1	69 R1	skip calculation
25 .2311104	bracket increment	70 1 E2	data
1	data	71 *	extract brkt value
26 ENTER†		72 FRC	rem, bracket data
27 1.122222	% multiplier data	73 X<>Y	taxable
34 20 VEO 11	stan 62	74 LHSIX	
	step 62	70 INI 744 DI 09	bracket
27 .2321213		78VLDL 87	taxable-bracket
30 XEQ 12	sten 65	78 X)02	taxable in/above
31 .5353537	more bracket data	79 GTO 06	this bracket?
4		80 RDN	calculate!
32 ENTER↑		81 CLX	destroy brkt data
33.44455	more multipliers	82 RTN	-
34 XEQ 11	step 62	83 + LBL 06	
35 138	last bracket	84 10	next multiplier
36 XEQ 09		85 ST* 28	
37 610 10	end program	86 ULX	nultipling data
307LDL 03 70 re 80	status = j	87 KLL 28 00 EDA	remaining data
37 CF 87 40 2		00 FRU 89 843 28	restore rem data
41 *		90 INT	multiplier
42+LBL 02	status = 2	91 %	% taxable/bracket
43+LBL 05	status = 5	92 ST+ 27	add to tax
44 .3421214	bracket data	93 RDN	remaining taxable
3	multiml:	94 X<>Y	bracket data
45 ENTER↑	multipliers	95 X>0? I	more brackets?

LISTING	COMMENTS	LISTING	COMMENTS
96 GTO 12 r 97 X<>Y r	epeat emaining taxable		
99 KIN 99+LBL 04 s	status = 4		
100 .2321212 t 2	oracket data		
101 ENTER↑ 102 1.122312 ∩ 445	nultiplier data		
103 XEQ 11 s 104 .3132325 n	step 62 more bracket data		
353 105 XEQ 12 g 106 .53 n 107 ENTER↑	step 65 more brackets		
108 .3742 n 109 XEQ 11 s 110 106 h	nore multipliers Step 62 Dig bracket		
111 XEQ 09 112 159	step 76 bigger bracket		
113 XEQ 09 114 212 115 XEQ 09 116+LBL 10 117 PCL 27	step 76 last bracket step 76 putput and end		
118 50 119 FS?C 09	ax accumulator		
120 ST+ X 121 *	loo loo	of toy	
122 "TX83" 123 FS?C 10 t	outine?		
124 RTN 125 "⊢ " 126 XEQ "X" 127 ADV 128 ADV 129 END	output tax		

PROGRAM REGISTERS NEEDED: 48

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Τ2

ΤЗ

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ΤЗ

PROGRAM DESCRIPTION

SCHEDULE D CAPITAL GAINS AND LOSSES

PURPOSE -

The purpose of this program is to aid the user in calculating capital gains and losses using Schedule D.

FEATURES/WARNINGS -

The program is relatively straightforward in its operation. Once begun, it steps through the tax form displaying values it assumes to be correct for each line of the form.

Lines that require input from the user are denoted by a colon (":") between the line name (a string of five characters) and the current line value (some number). An example of a line of this type is "STATS: 2.", where "STATS" is an abbreviation for "Filing Status", the colon indicates that this is a userspecified value, and the "2." is the current value. At any time the user encounters a program display similar to the one just described, its line value may be used as is by pressing [R/S] (to continue the program) or may be changed by keying in some new value (using the numeric keys) and pressing [R/S] (to continue the program). Manual calculations may be performed at this time using the HP-41's stack in order to arrive at the desired value to be input.

Lines that represent values calculated by the program, and which should be copied to the form, are denoted by an equal sign ("=") between the line name and the line value. An example of this is "LIN4F= -8,000.", where "LIN4F" is an abbreviation for "line 4f", the equal sign indicates that this is a program-calculated value, and "-8,000." is the current line value. At any time a program display similar to the one just described is encountered, its line value MUST NOT be changed by the user (i.e., by pressing any key other than [R/S]), or the program may perform calculations based on the altered (and incorrect) value.

The program symbolizes losses as negative numbers and gains as positive ones. The user must do the same. All inputs representing capital losses must be negative.

The program works equally well in any display mode (FIX, SCI, ENG, O through 9), but best results will be obtained using either FIX O or 2 which correspond to whole dollar amounts and dollars-and-cents amounts respectively. Money values may be entered in either fashion regardless of the display mode and will be remembered by the program exactly as they are input. However, the display mode does have an effect on the program's output. All output

values will be generated using the input values rounded to the current display mode (viz., an input of 9.25 in FIX 0 will be rounded to 9 before it is used in a calculation whereas the same value in FIX 2 will not be altered), and will cause small but perhaps significant deviations in output. The fact that the values are retained exectly as input allows the user to rerun the program with no new inputs in another display mode and quickly see the difference between whole dollar and dollars- and cents input.

The program does no error checking! All input values are assumed to be correct, regardless of their values, and are used as such. Erroneous values will usually not halt the program. The program may either be run to completion, or manually halted and restarted. Either way, the valid inputs may be skipped by pressing [R/S] and the invalid inputs corrected by entering the proper value when the line is displayed.

The program is compatible with printers. If a printer is attached, the program assumes it is on. All input values are echoed and all output values are streamed to the printer. With respect to the user, input values are treated in the same fashion regardless of the printer's presence. The output of program-generated values, on the other hand, differs dramatically based on the printer's existence. Without a printer, the program halts at each output value in the same fashion that it does when asking for input, thus allowing the user to manually record the value. With a printer, program-generated output does not halt program execution, is not displayed and is recorded on the printer, thus minimizing user interaction.

One feature of the program allows the user to skip all input prompts if the existing values are known to be correct. In this mode, the user without a printer may view only those lines calculated by the program. The user with a printer may rapidly generate an uninterrupted printout of both input and output. This mode is active when the flag O annunciator is lit in the display.

SAMPLE PROBLEM

Fill out the form on pages 61 and 62.

The example assumes:

- * that programs "SD" (Schedule D) and "0" (common subroutines)
 have been loaded into memory.
- * there are 56 available data registers (i.e., SIZE has been set to a number greater than 55).
- * the program is in "input mode." This is accomplished by pressing [XEQ] "P" repeatedly (no more than twice is necessary) until the annunciator for flag O cannot be seen in the display.
- * all pertinent data registers contain the value O. This is only for convenience in describing the example and is not required. If the user desires to duplicate the example exactly, and is certain that no important data will be destroyed, the computer's CLRG function may be employed to clear data memory (via [XEQ] "CLRG").
- * the display mode is FIX O.
- * flags 28 and 29 are set (the HP-41 decimal point and digit grouping flags).

DISPLAY	INPUT	KEYSTROKES	COMMENTS
			Identifies the program
SCHEDULE D	2		Lines 1-5 of form 1040.
31A13. U.	2		filing status If this
			program was called from the
			1040 program, this prompt
			will be skipped.
TXABL: 0.	50234	[R/S]	Line 37 from form 1040:
	2010		taxable income.
TOT1F: 0.	-5000	ER/S]	Total of line 1f: losses.
TOT1G: 0.	6000	ER/S]	Total of line 1g: gains.
LIN2a: O.	85	ER/S]	Line 2a: gain from sale of
			principal residence.
LIN2b: O.	2400	ER/S]	Line 2b: short-term capital
			gain from installment sales.
LIN3F: O.	-3000	ER/S]	Line 3f: loss from
			partnersips and fiduciaries.
LIN4F= -8,000.		[R/S]*	Line 4f: total losses.
LIN4G= 8,485.		[R/S]*	Line 4f: total gains.

SOLUTION

DISPLA	Y	INPUT	KEYSTROKES	COMMENTS
======				
LINE5=	485.		[R/S]*	Line 5: net gain (in this
				case).
LINE6:	0.		ER/S]	Line 6: carryover.
LINE7=	485.		ER/S]*	Line 7: net short term gain.
TOT8F:	0.	-8000	[R/S]	Line 8f: total long term
				gians.
T0T8G:	0.	9,500.	ER/S]	Line 8g: total long term
	2		55 (07	gains.
LIN9a:	0.	450	LR/SJ	Line 9a: gain from sale of
	0	/ 70		principal residence.
LINAD:	0.	630	LK/27	Line 9D: long term capital
IN105.	n		Γρ/ς]	Jine 10f. Loss from
LNIUF.	0.			partnersing and fiduciaries
LN10G+	0	750	[R/S]	line 10g. gain from
LINIUG.	0.	150		partnersips and fiduciaries.
LN11F=	-8,000,		[R/S]*	Line 11f: total losses.
LN11G=	11,330.		ER/S]	Line 11g: total gains.
LIN12=	3,330.		[R/S]	Line 12: net gain.
LIN13:	0.	543	ER/S]	Line 13: capital gains
				distributions.
LIN14:	0.	1760	[R/S]*	Line 14: gain from form
				4797 line 5(a)(1).
LIN15:	0.	863	ER/S]	Line 15: your share of net
				long term gain from small
			F. (business corporations.
LIN16=	6,496.		ER/SJ	Line 16: sum lines 12 through
	•	0.000		15.
LIN1/:	0.	-8,000.	LK/S]	Line I/: Long term loss
I TN10-	-1 50/		[p/c]+	Line 18, net long term loss
LIN10-	-1,010			Line 10. net loss lines 20
				through 22 will be skipped.
I TN23=	-510		[R/S]*	Line 23: Line (ii) is valid.
I TN24=	-510			Line 24: line (i) is smallest
LIN25=	0.		[R/S]*	Line 25: line 7 is gain.
				lines 26 through 30 will be
				skipped.
LIN31=	-510.		[R/S]*	Line 31: line 24.
LIN32=	-1,504.		[R/S]*	Line 32: line 18.
LIN33=	485.		ER/S]*	Line 33: line 7.
LIN34=	-1,019.		ER/S]*	Line 34: line 33 + line 32.
LIN35=	-1,020.		LR/SJ*	Line 35: Line 31 * 2.
LIN36=	1.		LR/SJ*	Line 36: Line 35 from Line
4				J4. The last output is left in
1.				the Y-register
				the A register.

* [R/S] in this instance is not necessary if a printer is attached.

SCHEDULE D (FORM 1040) Department of the Treasury

Internal Revenue Service (0)

Capital Gains and Losses (Examples of property to be reported on this Schedule are gains and losses on stocks, bonds, and similar investments, and gains (but not losses) on personal assets such as a home or jewelry.) Attach to Form 1040. See Instructions for Schedule D (Form 1040).

Name(s) as shown on Form 1040

Your social security number

OMB No. 1545-0074

982

14

Pa	Part I Short-term Capital Gains and Losses—Assets Held One Year or Less									D
a. K scrip 79	Kind of property and de- tion (Example, 100 shares & preferred of "Z" Co.)	b. Date acquired (Mo., day, yr.)	c. Date sold (Mo., day, yr.)	d. Gross sales price less expense of sale	e. Cost or basis, as a (see instru page 23	other djusted actions 3)	f. LOSS If column (e) is than (d) subtrac from (e)	more t (d)	g. GAIN If column (d) is than (e) subtract from (d)	more t (e)
1				-						
				_						
							5,000		6,000	
2a	Gain from sale or ex Form 2119, lines 7	change of a prir or 11	ncipal residence	held one year or le	ess, from	2a			85	
b	Short-term capital g	ain from installn	nent sales from	Form 6252, line 2	1 or 29 .	2b		//////	2,400	
3	Net short-term gain	or (loss) from	partnerships and	d fiduciaries		3	-3,000			
4	Add lines 1 through	3 in column f a	nd column g .			4	(-8,000)	8,485	
5	Combine line 4, colu	umn f and line 4,	column g and er	nter the net gain o	r (loss) .	• •		5	485	
6	Short-term capital i	oss carryover fro	om years beginn	ing after 1969 .				6	(0)
7	Net short-term gain	or (loss), combi	ne lines 5 and 6		· · ·			7	485	

Part II Long-term Capital Gains and Losses—Assets Held More Than One Year

8										
9a	Gain from sale or e	exchange of a pri	ncipal residence	held more than	one year,				450	
	from Form 2119, li	nes 7, 11, 16 or	18	• • • • •	• • •	<u>9a</u>			450	
Ь	Long-term capital g	ain from installm	ent sales from F	orm 6252, line 2	l or 29 .	9 b			630	
10	Net long-term gain	or (loss) from	partnerships and	fiduciaries		10	<u> </u>		750	
11	Add lines 8 through	10 in column f a	nd column g		• • •	11	1(-8,000)	11,330	
12	Combine line 11, co	olumn f and line	1, column g and	enter the net gai	n or (loss)			12	3,330	
13	Capital gain distrit	outions		••••				13	543	
14	Enter gain from Fo	orm 4797, line 5	(a)(1)					14	1,760	
15	Enter your share o	f net long-term g	ain from small b	usiness corporati	ons (Subcl	napter	·S)	15	863	
16	Combine lines 12 t	hrough 15			• • •			16	6,496	
17	Long-term capital	loss carryover fro	om years beginni	ing after 1969.				17	(-8,000))
18	Net long-term gain	or (loss), combin	ne lines 16 and 1	7	· · ·			18	- 1,504	
	Note: Complete the	is form on revers	se. However, if y Form 4798 inste	ou have capital . ad.	loss carryo	vers	from years begi	inning	before 1970, d	lo not

For Paperwork Reduction Act Notice, see Form 1040 instructions

Schedule D (Form 1040) 1982		F	Page 2
Part III Summary of Parts I and II			
19 Combine lines 7 and 18, and enter the net gain or (loss) here	19	-1,019	
Note: If line 19 is a loss, skip lines 20 through 22 and complete lines 23 and 24. If line 19 is a gain			
complete lines 20 through 22 and skip lines 23 and 24			
20 If line 19 shows a gain, enter the smaller of line 18 or line 19. Enter zero if there			
is a loss or no entry on line 18		<u> </u>	<u>/////////////////////////////////////</u>
21 Enter 60% of line 20.	_21		
If line 21 is more than zero, you may be liable for the alternative minimum tax. See Form 6251.			
22 Subtract line 21 from line 19. Enter here and on Form 1040, line 13			
 23 If line 19 shows a loss, enter one of the following amounts: (i) If line 7 is zero or a net gain, enter 50% of line 19; (ii) If line 18 is zero or a net gain, enter line 19; or (iii) If line 18 are net losses, enter amount on line 7 added to 50% of the amount on line 18 	23	-510	
(III) If fine 7 and fine 18 are net losses, enter anount on fine 7 added to 50 % of the amount on fine 10			
(i) The amount on line 23:			
(ii) \$3,000 (\$1,500 if married and filing a separate return); or			
(iii) Taxable income, as adjusted	24	- 510	
Part V Complete this Part Only if You Elect Out of the Installment Method And Report a at Less Than Full Face Value	Note o	or Other Oblig	ation
Check here if you elect out of the installment method.			
Enter the face amount of the note or other obligation Enter the percentage of valuation of the note or other obligation			
Computation of Post-1969 Capital Loss Carryovers from 1982 to 1983			
(Complete this part if the loss on line 23 is more than the loss on line 24)			
Note: You do not have to complete Part V on the copy you file with IRS.			
Section A.—Short-term Capital Loss Carryover			
	25	0	
25 Enter loss shown on line 7, it hole, enter zero and skip lines 20 through 30-then go to line 31.			
26 Enter gain shown on line 18. If that line is blank or shows a loss, enter zero	26		
	27		
27 Reduce any loss on line 25 to the extent of any gain on line 26	_2/		
28 Enter amount shown on line 24	28		
29 Enter smaller of line 27 or 28	29		
30 Subtract line 29 from line 27. This is your short-term capital loss carryover from 1982 to 1983	30		
Section B.—Long-term Capital Loss Carryover			
	1		1
31 Subtract line 29 from line 28 (Note: If you skipped lines 26 through 30, enter amount from line 24).	31	-510	
32 Enter loss from line 18; if none, enter zero and skip lines 33 through 36	32	403,1-	
33 Enter gain shown on line 7. If that line is blank or shows a loss, enter zero	_33	485	
34 Reduce any loss on line 32 to the extent of any gain on line 33	34	-1,01 9	

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36 Subtract line 35 from line 34. This is your long-term capital loss carryover from 1982 to 1983 . .

. . .

.

35

36

-1,020

1

USER INSTRUCTIONS

INS ===	TRUCTIONS	INPUT	KEYSTROKES	DISPLAY
1.	At a minimum, load the following programs: "SD" (Schedule D) and "O" (misc. routines).		[shift][GTO] [shift][GTO]	
2.	Allocate data registers (minimum 56).		[XEQ] "SIZE" 056	
3.	Select an appropriate display format.		[shift][FIX] n	
4.	Select either "prompting" (flag O set) or "non-prompt- ing" (flag O clear) mode. Pressing [XEQ] "P" toggles between these modes.		[XEQ] "P"	
5.	Run the Schedule D program.		EXEQ] "SD"	SCHEDULE D
6.	This display identifies the program.		[R/S]*	STATS: X
7.	Enter one of lines 1-5: your filing status.	status	Er/s]	TXABL: ×
8.	Enter line 37 from form 1040: taxable income.	taxable	ER/S]	TOT1F: x
9.	Enter the total of column 1f. This number must be negative since it's a loss.	total	Er/s]	TOT1G: x
10.	Enter the total of column 1g.	total	[R/S]	LIN2a: x
11.	Enter line 2a: gain from sale of principal residence.	gain	ER/S]	LIN2b: x
12.	Enter line 2b: short-term capital gain from install- ment sales.	gain	[r/s]	LIN3F: ×
13.	Enter line 3f: loss from partnersips and fiduciaries. This number should be nega- tive. If a value is entered here, line 3g will not be prompted for.	loss	Er/SJ	LIN4F: x

INS	TRUCTIONS	INPUT	KEYSTROKES	DISPLAY	
14.	If line 3f was zero, enter line 3g: gain from partnerships and fiduciaries This number should be positive.	gain	Er/s]	LIN4F= x	
15.	Output of line 4f: total losses.		[R/S]*	LIN4G= ×	
16.	Output of line 4g: total gains.		[R/S]*	LINE5= ×	
17.	Output of line 5: net gain or loss.		[R/S]*	LINE6: ×	
18.	Enter line 6: short term capital loss carryover.	carryover	[R/S]	LINE7= x	
19.	Output of line 7: net short term gain.		[R/S]*	T0T8F: x	
20.	Enter the total of column 8f. This number must be negative since it is a loss.	total loss	[R/S]	T0T8G: ×	
21.	Enter the total of column 8g.	total gain	ER/S]	LIN9a: x	
22.	Enter line 9a: gain from sale of principal residence.	gain	ER/S]	LIN9b: x	
23.	Enter line 9b: long term capital gain from install– ment sales.	gain	ER/S]	LN1OF: X	
24.	Enter line 10f: loss from partnersips and fiduciaries. If a value is entered here, line 10g will be skipped.	loss	[R/S]	LN10G: ×	
25.	Enter line 10g: gain from partnersips and fiduciaries. If a value was entered for line 10f, this prompt will be skipped.	gain	[R/S]	LN11F= ×	
26.	Output of line 11f: total losses.		[R/S]*	LN11G= ×	
27.	Output of line 11g: total gains.		[R/S]*	LIN12= x	

	TRUCTIONS	INPUT	KEYSTROKES	DISPLAY	
28.	Output of line 12: net gain.		[R/S]*	LIN13: ×	
29.	Enter line 13: capital gains distributions.	distrib.	ER/SJ	LIN14: x	
30.	Enter line 14: gain from form 4797 line 5(a)(1).	gain	[R/S]	LIN15: ×	
31.	Enter line 15: your share of net long term gain from small business corporations.	gain	ER/S]	LIN16= x	
32.	Output of line 16: sum lines 12 through 15.		[R/S]*	LIN17: ×	
33.	Enter line 17: Long term loss carryover.	carryover	[R/S]	LIN18= ×	
34.	Output of line 18: net long term loss.		[R/S]*	LIN19= x	
35.	Output of line 19: net gain or loss. If this line is negative, lines 20 through 22 will be skipped and lines 23 through 24 will be output. If this line is positive, lines 23 through 24 will be skipped and lines 20 through 22 will be output.		ER/S]*	LIN2O= ×	
36.	Output line 20: the smaller of lines 18 and 19.		[R/S]*	LIN21= ×	
37.	Output line 21: 60% of line 20.		[R/S]*	LIN22= x	
38.	Output line 22: line 21 from line 19.		[R/S]*	LIN23= ×	

INSTRUCTIONS		INPUT	KEYSTROKES	DISPLAY
39.	Output of line 23: If line 7 >= 0 then output 50% of line 9. If line 18 >= 0 then output line 19, else output line 7 + 50% line 8.		[R/S]*	LIN24= x
40.	Output line 24: the smallest of line 23, \$3000 (\$1500 if status 3) and taxable income.		[R/S]*	LIN25= ×
41.	If line 24 shows a greater loss than line 23 then the program will halt at this point.			
42.	Output line 25: output line 7 if it is a loss, else output 0. If 0, skip lines 25 through 30.		[R/S]*	LIN26= ×
43.	Output line 26: line 18 if a gain, otherwise O.		[R/S]*	LIN27= x
44.	Output line 27: output line 25 + line 26. If positive, output O.		[R/S]*	LIN28= x
45.	Output line 28: a copy of line 24.		[R/S]*	LIN29= x
46.	Output line 29: the smaller of lines 27 and 28.		[R/S]*	LIN3O= x
47.	Output line 30: line 29 from line 27.		[R/S]*	LIN31= x
48.	Output of line 31: line 29 from line 28 or a copy of line 24.		[R/S]*	LIN32= x
49.	Output of line 32: line 18 if a loss, O if not.		ER/S]*	LIN33= x
50.	Output of line 33: line 7 if a gain, otherwise O.		[R/S]*	LIN34= x

INSTRUCTIONS		INPUT	KEYSTROKES	DISPLAY
51.	Output of line 34: Line 33 + line 32. If greater than 0, output 0.		[R/S]*	LIN35= x
52.	Output line 35: line 31 * 2.		[R/S]*	LIN36= x
53.	Output of line 36: line 35 from line 34.		[R/S]*	x
54.	The last output is left in the X-register.			

* [R/S] in this instance is not necessary if a printer is attached.

PROGRAM DETAIL -

The form Schedule D program is 267 steps and 665 bytes (95 registers) long. It requires one other program: the miscellaneous routines program--233 bytes. At a minimum, 56 data registers are needed, totalling 184.3 registers for operation.

The program has one entry point, global label "SD".

Aside from the flags manipulated by the subroutines called, the program itself manipulates the following flags:

The data registers used by the form 1040 program are preserved with the exception of registers 1 and 21. The following data registers are used:

00 = register index for data manipulation O1 = lines 1 through 5, form 1040: filing status 21 = line 37, form 1040: taxable income 27 = accumulator index28 = total of column 1f29 = total of column 1q30 = line 2a: gain from sale or exchange of a principal residence 31 = line 2b: short-term capital gain from installment sales 32 =line 3f: net short-term loss from partnerships and fiduciaries 33 = line 3g: net short-term gain from partnerships and fiduciaries 34 = line 4g: total short-term gain 35 = line 5: total gain or loss 36 = line 6: short-term capital loss carryover 37 = line 7: net short-term gain or loss 38 = total of column 8f39 = total of column 8g40 = line 9a: gain from sale or exchange of a principal residence 41 = line 9b: long-term capital gain from installment sales 42 = line 10f: net long-term loss from partnerships and fiduciaries 43 = line 10g: net long-term gain from partnerships and fiduciaries 45 = line 11g: total long-term gain 46 = line 12: total gain or loss 47 = line 13: capital gains distribution 48 = line 14: gain from form 479749 = line 15: your share of net long-term gain from small business corporations 51 =line 16: sum of lines 12 through 15 52 = line 17: long-term capital loss carryover 53 = line 18: net short-term gain or loss 54 = line 21: 60% of line 20 55 = line 24: capital gain or loss
LISTING	COMMENTS	LISTING	COMMENTS
01+LBL "SD"		52 RCL 35	line 5
02 SF 12	print double wide	53 RND	line 5 + line 6
03 "SCHEDOL		54 + EE CIO 77	
	accum, pointer	53 510 57 54 VEO "V"	
04 34 05 XEQ "!!"	initialize	57 ANV	
06 XEQ "Z"	status prompt	58 45	new accumulator
07 "TXABL"		59 XEQ "T"	store/clear accum.
08 21	taxable income	60 "TOT8F"	
09 STO 00	set pointer	61 XEQ "Z"	line 8f prompt
10 XEQ "Z"	prompt	62 "TOT8G"	
11 ADV		63 XEQ "Y"	line 8g prompt
	line 1f index	64 "LIN9a"	& sum
	set pointer	65 XEW "Y"	line og prompt
14 "(U) 1F 15 VEO "7"	line 1f prompt	66 "LIN70 67 VEA "V"	e sum
10 AEQ 2 16 "TOTIC"		67 AER 1 68 "IN10F"	
17 XFQ "Y"	line 1g prompt	69 XEQ "7"	line 9a prompt
18 "LIN2a"	& sum	70 X=0?	& sum
19 XEQ "Y"	line 2a prompt	71 GTO 02	no loss?
20 "LIN2b"	& sum	72 CLX	prompt for gain
21 XEQ "Y"	line 2b prompt	73 STO 33	zero line l0g
22 "LIN3F"	& sum	74 1	skip line 10g
23 XEQ "Z"	line 3f prompt	75 ST+ 00	1.1.1.1.10
24 X=0?	no loss:	76 GTO 03	skip line lug
25 GIU 01	prompt for gain	77+LBL 02	
26 ULA 27 CTO 77	zero Tine 3g	78 "LNIUG 79 VEN "V"	prompt for line
28 1		77 AE≪ 1 80+1 BL 03	10a
29 ST+ 00	skip line 3g reg.	81 "LN11F"	.09
30 GTO 00	" " 3g prompt	82 RCL 38	line 8f
31+LBL 01		83 RND	
32 "LIN3G"		84 RCL 42	line 10f
33 XEQ "Y"	line 3g prompt	85 RND	
34+LBL 00		86 +	1: 11£
35 "LIN4F"	1f total	87 XEQ "X"	output line lif
36 KUL 20 77 DND	ii totai	88 "LNIIG og dri 45	line 11a
38 PCI 32	line 3f	90 XEQ "X"	output line 11a
39 RND		91 51	new accumulator
40 +		92 XEQ "T"	store/zero accum.
41 XEQ "V"	output line 4f	93 RDN	line 11g
42 "LIN4G"		94 "LIN12"	
43 RCL 34	accumulator	95 +	line 11f+line 11g
44 XEQ "X"	output line 4g	96 STO 46	accumulate
45 "LINE5"	1. LC . 1. J	97 SF 06 00 VE0 "V"	output line 12
45 + 47 CTO 75	line 4t + line 4g	98 XEW "X" 99 0TV	Sucput The 12
47 510 3J 48 XE0 "X"	output line E	100 "I TN13"	
49 "LINE6"	ourpur rine 5	101 XEQ "Y"	line 13 pr. & sum
50 XEQ "Z"	prompt for line 6	102 "LIN14"	
51 "LINE7"		103 XEQ "Y"	line 14 pr. & sum

LISTING	COMMENTS	LISTING	COMMENTS
104 "LIN15" 105 XEQ "Y" 106 1 107 ST+ 00	line 15 prompt & sum skip reg. 50	156 RND 157 RCL 53 158 RND 159 2	line 18
108 "LIN16" 109 RCL 51 4	accumulator	160 / 161 +	line 7 + line 18/2
110 XEQ "X" 111 "LIN17" 112 XEQ "Z"	line 17 prompt	162 GTU 07 163+LBL 08 164 CLX	case (i)
113 "LIN18" 114 RCL 51	accumulator	165 50 166 %	50% of line 19
115 RND 116 + 117 STO 53	line 17 + sum	167 GTO 07 168+LBL 06 (169 RDN	case (ii)
118 XEQ "X" (119 ADV	output line 18	170 RDN 171+LBL 07	line 19
120 "LIN19" 121 RCL 37 122 +	line 7 line 7 + line 18	172 XEQ "X" (173 "LIN24" 174 ABS	output line 23
123 XEQ "V" (124 ENTER†	output line 19	175 1 176 SIGN	l in lastx
125 X<0? 126 GTO 04 9 127 "LIN20"	go to line 23	177 KDN 178 RCL 01 179 3	line 23 status
128 RCL 53 129 X>Y?	line 18 larger than ln 19?	180 X=Y? 181 ISG L	status = 3? 2 in lastx
130 X<>Y 131 X<0? 132 CLX	loss?	182 CLD 183 RDN 184 RDN	dummy step line 23
133 XEQ "V" (134 "LIN21"	output line 20	185 3 E3 5 186 LASTX 1	\$3000 or 2
135.6 (136 * 137 STO 54	50% of line 20	187 / 5 188 X <y? 1<br="">189 X<>Y</y?>	33000 or \$1500 less than line 23?
138 XEQ "X" (139 "LIN22" 140 X<>Y	output line 21	190 RDN 191 RCL 21 ₁ 192 X <y?< td=""><td>lesser value taxable income less than last?</td></y?<>	lesser value taxable income less than last?
141 RDN 142 -	line 21 fm line 19	193 X<>Y 194 RDN 195 CHS	lesser value
143 AEQ V 144 GTO 05 145+LBL 04	go to line 25	196 STO 55 197 XEQ "V"	output line 24
146 "LIN23" 147 RCL 37 148 SIGN	line 7	198 X <y? 199 GTO 05 4 200 ADV</y? 	end
149 X>0? 150 GTO 08	gain?	201 "LIN25" 202 RCL 37	line 7
151 RCL 53 152 SIGN 153 X>02 -	gain?	203 X>0? (204 CLX 205 XEQ "V" (gain? Dutput line 25
154 GTO 06 155 RCL 37	line 7	206 X=0? v 207 GTO 09 g	vas a gain? go to line 31

LISTING	COMMENTS	LISTING	COMMENTS
208 "LIN26" 209 RCL 53 210 X<0?	line 18 loss?	260 XEQ "V" (261 "LIN36" 262 -	output line 35 line 35 fm line 34
211 CLX 212 XEQ "V" (213 "LIN27" 214 +	output line 26	263 XEQ "V" (264+LBL 05 265 ADV	output line 36
215 X>0? 216 CLX 217 ENTER↑	gain?	266 HDV 267 END	
218 XEQ "V" (219 "LIN28" 220 RC(55	output line 27 line 18		
221 XEQ "V" 222 "LIN29"	output line 28		
223 ANT: 224 X<>Y 225 XEQ "V" 226 "LIN30" 227 X<>Y	line 27 & 28 Dutput line 29		
228 RDN 229 - 230 XEQ "V" (231+LBL 09 232 ADV	line 29 fm line 27 output line 30		
233 "LIN31" 234 RCL 55 235 RND 236 X<>Y	line 24		
237 - 238 XEQ "V" 278 "LIN72"	line 29 fm line 28 Dutput line 31		
237 LIN32 240 RCL 53 241 X>0? 242 CLX	line 18 gain?		
243 XEQ "V" 244 X=0? 245 GTO 05	output line 32 gain? end		
246 "LIN33" 247 RCL 37 248 X<0? 249 CLX	line 7 loss?		
250 XEQ "V" (251 "LIN34"	output line 33		
252 + 253 X>0? 254 CLX	gain?		
255 XEQ "V" (256 "LIN35" 257 X<>Y	output line 34		
258 2 259 *			





SD





SD

PROGRAM DESCRIPTION

FORM 4625 COMPUTATION OF MINIMUM TAX

PURPOSE -

The purpose of this program is to aid the user in the computation of minimum tax using form 4625.

FEATURES/WARNINGS -

The program is relatively straight-forward in its operation. Once begun, it steps through the tax form displaying values it assumes to be correct for each line of the form.

Lines that require input from the user are denoted by a colon (":") between the line name (a string of five characters) and the current line value (some number). An example of a line of this type is "STATS: 2.", where "STATS" is an abbreviation for "Filing Status", the colon indicates that this is a userspecified value, and the "2." is the current value. At any time the user encounters a program display similar to the one just described, its line value may be used as is by pressing [R/S] (to continue the program) or may be changed by keying in some new value (using the numeric keys) and pressing [R/S] (to continue the program). Manual calculations may be performed at this time using the HP-41's stack in order to arrive at the desired value to be input.

Lines that represent values calculated by the program, and which should be copied to the form, are denoted by an equal sign ("=") between the line name and the line value. An example of this is "LINE2= 20,000.", where "LINE2" is an abbreviation for "line 2", the equal sign indicates that this is a program-calculated value, and "20,000." is the current line value. At any time a program display similar to the one just described is encountered, its line value MUST NOT be changed by the user (i.e., by pressing any key other than [R/S]), or the program may perform calculations based on the altered (and incorrect) value.

The program works equally well in any display mode (FIX, SCI, ENG, O through 9), but best results will be obtained using either FIX O or 2 which correspond to whole dollar amounts and dollars-and- cents amounts respectively. Money values may be entered in either fashion regardless of the display mode and will be remembered by the program exactly as they are input. However, the display mode does have an effect on the program's output. All output values will be generated using the input values rounded to the current display mode (viz., an input of 9.25 in FIX O will be rounded to 9 before it is used in a calculation whereas the same value in FIX 2 will not be altered), and will cause small but perhaps significant deviations in output. The fact that the values are retained exectly as input allows the user to rerun the program with no new inputs in another display mode and quickly see the difference between whole dollar and dollars-and-cents input.

The program does no error checking! All input values are assumed to be correct, regardless of their values, and are used as such. Erroneous values will usually not halt the program. The program may either be run to completion, or manually halted and restarted. Either way, the valid inputs may be skipped by pressing [R/S] and the invalid inputs corrected by entering the proper value when the line is displayed.

The program is compatible with printers. If a printer is attached, the program assumes it is on. All input values are echoed and all output values are streamed to the printer. With respect to the user, input values are treated in the same fashion regardless of the printer's presence. The output of program-generated values, on the other hand, differs dramatically based on the printer's existence. Without a printer, the program halts at each output value in the same fashion that it does when asking for input, thus allowing the user to manually record the value. With a printer, program-generated output does not halt program execution, is not displayed and is recorded on the printer, thus minimizing user interaction.

One feature of the program allows the user to skip all input prompts if the existing values are known to be correct. In this mode, the user without a printer may view only those lines calculated by the program. The user with a printer may rapidly generate an uninterrupted printout of both input and output. This mode is active when the flag O annunciator is lit in the display.

SAMPLE PROBLEM

Fill out the form on page 79.

The example assumes:

- * that programs "MN" (Minimum Tax) and "O" (common subroutines) have been loaded into memory.
- * there are 50 available data registers (i.e., SIZE has been set to a number greater than 49).
- * the program is in "input mode." This is accomplished by pressing [XEQ] "P" repeatedly (no more than twice is necessary) until the annunciator for flag O cannot be seen in the display.
- * all pertinent data registers contain the value O. This is only for convenience in describing the example and is not required. If the user desires to duplicate the example exactly, and is certain that no important data will be destroyed, the computer's CLRG function may be employed to clear data memory (via [XEQ] "CLRG").
- * the display mode is FIX O.
- * flags 28 and 29 are set (the HP41 decimal point and digit grouping flags).

SOLUTION	J	
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DISPLAY	INPUT	KEYSTROKES	COMMENTS
		EXEQ] "MN"	
MINIMUM TAX		[R/S]*	Identifies the program.
STATS: O.	2	[R/S]	Lines 1-5 of form 1040:
			filing status.
L1 <a>: 0.	423	[R/S]	Accelerated depreciation on
			real property.
L1 : 0.	2500	[R/S]	Accelerated depreciation on
			leased property.
L1 <c>: 0.</c>	4000	ER/S]	Amortization.
L1 <d>: 0.</d>	6000	ER/S]	Reserves for losses on bad
			debts of financial
			institutions.
L1 <e>: 0.</e>	2568	ER/S]	Depletion.
L1 <f>: 0.</f>	4509	ER/S]	Intangible drilling costs.
LINE2= 20,000.		ER/S]*	Total tax preference items.
			Sum lines 1a through 1f.
LINE3: O.	123	ER/S]	Form 1040, line 50.

DISPLAY	(INPUT	KEYSTROKES	COMMENTS
======		===========		
LINE4:	0.		ER/SJ	Tax from recapture of investment credit.
LINE5:	0.		[R/S]	Tax on premature redemption of Individual Retirement Bond(s).
LINE6=	123.		[R/S]*	Sum lines 3 through 5.
LINE7=	10,000.		[R/S]*	The larger of: 1/2 of line 6, or \$10,000 (\$5,000 if you are married filing separately).
LINE8=	10,000.		[R/S]*	Line 7 from line 2.
LINE9=	1,500.		[R/S]*	Line 8 * 0.15
LIN10:	0.		ER/S]	1982 net operating loss carryover to 1983.
LIN11=	0.		[R/S]*	Line 10 * 0.15
LIN12=	0.		ER/S]*	The smaller of lines 9 and 11.
LIN13=	1,500.		[R/S]*	Line 12 from line 9.
LIN14:	0.		ER/S]	Minimum tax deferred from from earlier years to 1982.
LIN15=	1,500.		[R/S]*	Sum lines 13 and 14.
16 <a>:	0.		[R/S]	Credit for the elderly.
16 :	0.		ER/S]	Credit for political contributions.
16 <c>:</c>	0.		[R/S]	Credit for child care expenses.
16 <d>:</d>	0.		[R/S]	Residential energy credits.
LIN17=	0.		[R/S]*	Sum lines 16a through 16d.
LIN18= 1,500.	1,500.		[R/S]*	Line 17 from line 15.

* [R/S] in this instance is not necessary if a printer is attached.

Form	4625
Departm	ent of the Treasury
Internal	Revenue Service

Computation of Minimum Tax—Individuals

omb №. 1545–0174 പ്രിവാന

29

See instructions on back.
 Attach to Form 1040.

Name(s) as shown on Form 1040

Your social security number

File this form if your tax preference items (line 2) are more than \$10,000 (\$5,000 if you are married filing separately) even though you owe no minimum tax, **OR** if you have minimum tax deferred from an earlier year.

		///////////////////////////////////////		///////
1	Tax preference items for minimum tax:			
	(a) Accelerated depreciation on real property—			\//////
	(1) Low-income rental housing $(167(k))$	1a(1)		
	(2) Other nonrecovery real property or 15-year real property	1a(2)	423	
	(b) Accelerated depreciation on leased personal property or leased recovery property other than			
	15-year real property	1ь	2500	
		10	4 000	••••
		1.4	1,000	••••
	(a) Reserves for losses on bad debts of financial institutions		6,000	
			2,560	
	(f) Intangible drilling costs	_1f	<u> </u>	
2	Total tax preference items. Add lines 1(a) through 1(f)	2	20,000	
3	Amount from Form 1040, line 50*			
4	Tax from recapture of investment credit (from Form 1040, line 54) 4			
5	Tax on premature redemption of Individual Retirement Bond(s)			
Ŭ	(from Form 5329 line 11) 5			
6	Add lines 2 through 5			
0				
7	Enter the larger of: (a) one-half of the amount on line 6, or (b) \$10,000 (\$5,000 if you are married	_	10 000	
	filing separately)		10,000	
			10	
8	Subtract line 7 from line 2 (If line 7 is more than line 2, enter zero)		10,000	
			1 5 4 4	
9	Multiply amount on line 8 by 15%	9	1,500	
10	1982 net operating loss carryover to 1983 (attach computation) . 10 0			
11	Multiply amount on line 10 by 15%			
12	Deferred minimum tax. Enter the amount from line 9 or line 11, whichever is smaller	12	0	
12	Minimum tay, Subtract line 12 from line 9	13	1.500	
13				•••••
••	E terre initiation to the formed forme and in the 1000 (attack computation)	14	0	
14	Enter minimum tax deterred from earlier years to 1982 (attach computation).			
		15	1.500	
15	Total minimum tax. Add lines 13 and 14			
16	Excess tax credits. If Form 1040, line 50, is more than zero, skip this line and enter the amount from			
	line 15 on line 18.			
	(a) Credit for the elderly			
	(b) Credit for political contributions			
	(c) Credit for child care expenses			
	(d) Residential energy credits			
17	Add lines 16(a) through 16(d)	17	D	
12	Subtract line 17 from line 15. If line 17 is more than line 15, enter zero. Enter here and on Form			
10	1040. line 52	18	1,500	
* Do	not include any tax from Form 4970. Form 4972. Form 5544, or any penalty tax under sec. 72(m)(5)			
	intering the second state of the state of the second state and the second state of the			

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USER INSTRUCTIONS

INS	TRUCTIONS	INPUT	KEYSTROKES	DISPLAY
1.	At a minimum, load the following programs: "MN" (Minimum Tax) "O" (misc. routines).		[shift][GTO] [shift][GTO]	
2.	Allocate data registers (minimum 50).		[XEQ] "SIZE" 050	
3.	Select an appropriate display format.		[shift][FIX] n	
4.	Select either "prompting" (flag O set) or "non-prompt- ing" (flag O clear) mode. Pressing [XEQ] "P" toggles between these modes.		[XEQ] "P"	
5.	Run the program.		EXEQ] "SG"	MINIMUM TAX
6.	This display identifies the program.		[R/S]*	STATS: ×
7.	Enter one of lines 1–5: your filing status.	status	[R/S]	L1 <a>: x
8.	Enter accelerated depreciation on real property.	depr.	[R/S]	L1 : x
9.	Enter accelerated depreciation on leased property.	depr.	[R/S]	L1 <c>: x</c>
10.	Enter amortization.	amort.	ER/S]	L1 <d>: x</d>
11.	Enter reserves for losses on bad debts of financial institutions.	reserves	[R/S]	L1 <e>: x</e>
12.	Enter depletion.	depletion	ER/S]	L1 <f>: x</f>
13.	Enter intangible drilling costs.	costs	[R/S]	LINE2= x
14.	Output of total tax preference items: sum lines 1a through 1f.		[R/S]*	LINE3: x
15.	Enter Form 1040, line 50.	line 50	[R/S]	LINE4: ×

INS	TRUCTIONS	INPUT	KEYSTROKES	DISPLAY
16.	Enter tax from recapture of investment credit.	tax	[r/s]	LINE5: X
17.	Enter tax on premature redemption of Individual Retirement Bond(s).	tax	[R/S]	LINE6= x
18.	Output the sum of lines 3 through 5.		[R/S]*	LINE7= x
19.	Output of the larger of: 1/2 of line 6, or \$10,000 (\$5,000 if you are married filing separately).		[R/S]*	LINE8= ×
20.	Output the difference between Line 7 and line 2.		[R/S]*	LINE9= x
21.	Output line 8 * 0.15		[R/S]*	LIN10: ×
22.	Enter 1982 net operating loss carryover to 1983.	loss carry.	[R/S]	LIN11= ×
23.	Output line 10 * 0.15		[R/S]*	LIN12= x
24.	Output the smaller of lines 9 and 11.		[R/S]*	LIN13= x
25.	Output the difference between line 12 and line 9.		[R/S]*	LIN14: x
26.	Enter the minimum tax deferred from from earlier years to 1982.	min. tax	[r/s]	LIN15= x
27.	Output the sum of lines 13 and 14.		[R/S]*	16 <a>: x
28.	Enter credit for the elderly.	elderly	ER/S]	16 : x
29.	Enter credit for political contributions.	contrib.	[R/S]	16 <c>: x</c>
30.	Enter credit for child care expenses.	child care	[R/S]	16 <d>: x</d>
31.	Enter residential energy credits.	energy	[R/S]	LIN17= ×

INSTRUCTIONS		INPUT	KEYSTROKES	DISPLAY
32.	Output the sum of lines 16a through 16d.			LIN18= x
33.	Output the difference be- tween line 17 from line 15.		[R/S]*	x
34.	A superfluous value is left in the X- register.			

* [R/S] in this instance is not necessary if a printer is attached.

PROGRAM DETAIL -

The Minimum Tax program is 140 steps and 343 bytes (49 registers) long. It requires one other program: the miscellaneous routines program at 233 bytes. At a minimum, 50 data registers are needed, totalling 132.3 registers for operation.

The program has one entry point, global label "MN".

Aside from the flags manipulated by the subroutines called, the program itself manipulates the following flags:

The the data registers used by the form 1040 program are preserved. The following data registers are used:

```
00 = register index for data manipulation
01 = lines 1 through 5, form 1040: filing status
27 = accumulator index
28 = text string used by routine 00
29 = counter for routine 00
30 = line 1a: accelerated depreciation on real property
31 = line 1b: accelerated depreciation on leased personal property
32 = line 1c: amortization
33 = line 1d: reserves for losses on bad debts of financial
              institutions
34 = line 1e: depletion
35 = line 1f: intangible drilling costs
36 = line 2: total tax preference items
37 = line 3: 1040 line 50
38 = line 4: tax recapture from investment credit
39 = line 5: tax on premature redemption of Individual Retirement
             bonds
40 = line 6: sum of lines 3 through 5
41 = line 9: line 8 * 0.15
42 = \text{line } 13: line 12 \text{ from line } 9
43 = line 14: minimum tax deferred from earlier years to 1982
44 = line 15: line 13 + line 14
45 = line 16a: credit for the elderly
46 = line 16b: credit for political contributions
47 = line 16c: credit for child care expense
48 = line 16d: residential energy credits
49 = line 17: sum of lines 16a through line 16d
```

LISTING	COMMENTS	LISTING	COMMENTS
01◆LBL "MN" 02 CF 04	not line 16 (yet)	52 RCL 36 1 53 RND	ine 2
03 SF 12 p 04 36 a 05 "MINIMUM	orint double wide accum. register	54 X<>Y 55 - 1 56 X<0?	ine 2 - line 7
1HX" 06 XEQ "U" ; 07 XEQ "7" ;	nitialize	57 CLX 58 XEQ "V" °	output line 8
08 ADV 09 30	ine la	60 15 1	5% of line 8
10 STO 00 r 11 "abcdeF" r 12 ASTO 28	eset pointer names for line 1	62 STO 41 63 XEQ "X" ° 64 ADV	output line 9
13 6 i 14 STO 29 15 SF 10 i	ndex for line 1 ine 1 flag	65 "LIN10" 66 XEQ "Z" 67 "LIN11"	ine 10 prompt
16 XEQ 00 s 17 "LINE2"	step 115	68 15 1 69 %	5% of line 10
18 RCL 36 19 XEQ "X" d	ine 6 Dutput line 6	70 XEQ "V" o 71 "LIN12"	output line 11
20 ADV 21 40 r 22 YEO "T"	new accumulator	72 RCL 41 1 73 X>Y?	ine 9
22 AEW 1 9 23 "345" 24 OSTO 28	accumulator	74 X<>Y 75 XEQ "V" ⁰ 74 "LIN17"	output line 12
25 3 ; 26 STO 29	index lines 3 - 5	76 EINIS 77 RCL 41 ¹ 78 RND	ine 9
27 CF 10 n 28 XEQ 00 s	not line 1 step 115	79 X<>Y 80 - 1	ine 12 fr. line 9
30 RCL 40 1 31 XEQ "X" a	ine 6 putput line 6	81 STU 42 82 XEQ "X" 0 83 "I IN14"	output line 13
32 ADV 33 "LINE7"		84 XEQ "Z" 85 "LIN15"	ine 14 prompt
34 10 35 ENTER↑		86 RCL 42 1 87 RND	ine 13
36 5 37 RCL 01 s 79 7	status	88 + 1 89 STO 44	ine 13 + line 14
38 3 39 X≠Y? s 40 RDN	status <> 3?	90 XEQ "X" o 91 ADV 92 49 n	utput line 15 new accumulator
41 RCL Z 9 42 1 E3	5 or 10	93 XEQ "T" s 94 "abcd" 1	tore/clear accum. ine names for 16
43 * 5 44 RCL 40 1 45 RND	5000 or 10000 ine 6	95 ASTO 28 96 4 i 97 STO 29	ndex for line 16
46 2 47 ∕ 48 X<=Y?		98 SF 04 99 SF 10 n 100 XF0 00	ine 16 flag meed char. line 1
49 X<>Y		101 CF 04 n	not line 1
50 AEQ V c	output line 7	102 "LIN17" 103 RCL 49	ine 17

LISTING	COMMENTS	LISTING	COMMENTS
104 XEQ "X" 0 105 ADV	output line 17		
106 "LIN18" 107 RCL 44 ¹ 108 RND	ine 15		
109 X<>Y 110 - 111 X<0?	line 17 from line	15	
112 CLX 113 XEQ "X" of 114 GTO 01 e 115+LBL 00 of 116 " " " 117 ARCL 28 f 118 ASTO X of 119 ASHF f 120 ASTO 28 of 121 " " f 122 ARCL X of 123 ASHF f 124 ASTO X of 125 "LINE" f 126 FS? 10	output line 18 and program common routine 5 spaces line labels 5 spaces + 1 chara labels - first cha store remaining la l space append 5 spaces + lose 6 spaces store character in label for lines 3	cter macter ibels character X - 5	
127 "L1<" 128 FS? 04 129 "16<"	line 16?		
130 ARCL X 131 FS? 10 132 "F>"	label character line 1 or 16?		
133 XEQ "Y" 134 DSE 29 135 GTO 00 136 RTN	line prompt decrement index step 115		
137+LBL 01 138 ADV 139 ADV 140 END	terminating sequer	nce	

PROGRAM REGISTERS NEEDED: 49

HEWLETT-PACKARD SOLUTIONS BOOK: 1982 TAXES



MN



PROGRAM DESCRIPTION

FORM 6251 ALTERNATE MINIMUM TAX

PURPOSE -

The purpose of this program is to aid the user in the computation of alternate minimum tax using form 6251.

FEATURES/WARNINGS -

The program is relatively straightforward in its operation. Once begun, it steps through the tax form displaying values it assumes to be correct for each line of the form.

Lines that require input from the user are denoted by a colon (":") between the line name (a string of five characters) and the current line value (some number). An example of a line of this type is "STATS: 2.", where "STATS" is an abbreviation for "Filing Status", the colon indicates that this is a userspecified value, and the "2." is the current value. At any time the user encounters a program display similar to the one just described, its line value may be used as is by pressing [R/S] (to continue the program) or may be changed by keying in some new value (using the numeric keys) and pressing [R/S] (to continue the program). Manual calculations may be performed at this time using the HP-41's stack in order to arrive at the desired value to be input.

Lines that represent values calculated by the program, and which should be copied to the form, are denoted by an equal sign ("=") between the line name and the line value. An example of this is "LIN2b= 3,400.", where "LIN2b" is an abbreviation for "line 2b", the equal sign indicates that this is a program-calculated value, and "3,400." is the current line value. At any time a program display similar to the one just described is encountered, its line value MUST NOT be changed by the user (i.e., by pressing any key other than [R/S]), or the program may perform calculations based on the altered (and incorrect) value.

The program works equally well in any display mode (FIX, SCI, ENG, O through 9), but best results will be obtained using either FIX O or 2 which correspond to whole dollar amounts and dollars-and-cents amounts respectively. Money values may be entered in either fashion regardless of the display mode and will be remembered by the program exactly as they are input. However, the display mode does have an effect on the program's output. All output values will be generated using the input values rounded to the current display mode (viz., an input of 9.25 in FIX O will be rounded to 9 before it is used in a calculation whereas the same value in FIX 2 will not be altered), and will cause small but perhaps significant deviations in output. The fact that the values are retained exectly as input allows the user to rerun the program with no new inputs in another display mode and quickly see the difference between whole dollar and dollars-and-cents input.

The program does no error checking! All input values are assumed to be correct, regardless of their values, and are used as such. Erroneous values will usually not halt the program. The program may either be run to completion, or manually halted and restarted. Either way, the valid inputs may be skipped by pressing [R/S] and the invalid inputs corrected by entering the proper value when the line is displayed.

The program is compatible with printers. If a printer is attached, the program assumes it is on. All input values are echoed and all output values are streamed to the printer. With respect to the user, input values are treated in the same fashion regardless of the printer's presence. The output of program-generated values, on the other hand, differs dramatically based on the printer's existence. Without a printer, the program halts at each output value in the same fashion that it does when asking for input, thus allowing the user to manually record the value. With a printer, program-generated output does not halt program execution, is not displayed and is recorded on the printer, thus minimizing user interaction.

One feature of the program allows the user to skip all input prompts if the existing values are known to be correct. In this mode, the user without a printer may view only those lines calculated by the program. The user with a printer may rapidly generate an uninterrupted printout of both input and output. This mode is active when the flag O annunciator is lit in the display.

SAMPLE PROBLEM

Fill out the form on page 92.

The example assumes:

- * that programs "AM" (Alternate Minimum Tax) and "0" (common subroutines) have been loaded into memory.
- * there are 55 available data registers (i.e., SIZE has been set to a number greater than 54).
- * the program is in "input mode." This is accomplished by pressing [XEQ] "P" repeatedly (no more than twice is necessary) until the annunciator for flag O cannot be seen in the display.
- * all pertinent data registers contain the value O. This is only for convenience in describing the example and is not required. If the user desires to duplicate the example exactly, and is certain that no important data will be destroyed, the computer's CLRG function may be employed to clear data memory (via [XEQ] "CLRG").
- * the display mode is FIX O.
- * flags 28 and 29 are set (the HP-41 decimal point and digit grouping
 flags).

DISPLAY	INPUT	KEYSTROKES	COMMENTS ====================================
		[XEQ] "AM"	
ALT MIN TAX		[R/S]*	Identifies the program.
STATS: O.	2	ER/S]	Lines 1-5 of form 1040:
EXMPT: O.	7	ER/S]	Line 4e of form 1040: total
LINE1: O.	80000	ER/S]	Line 32 of form 1040: adjusted gross income.
LIN2a: O.	68700	ER/S]	Line 34 of form 1040.
LIN2b= 3,400.		[R/S]*	Zero bracket amount.
LIN2c= 7,000.		ER/S]*	Exemptions * 1000.
LIN2d= 79,100.		[R/S]*	Sum of 2a through 2c.
LINE3= 900.		[R/S]*	Line 2d from line 1.
LIN4a: O.	16100	ER/S]	Adjusted itemized deductions,
LIN4b: O.	90000	ER/S]	Capital gain deduction.
LIN4c= 106,100.		[R/S]*	Sum lines 4a and 4b.
LINE5= 107,000.		[R/S]*	Alternative minimum taxable income: the sum of lines 3 and 4c.

SOLUTION

DISPLAY	INPUT	KEYSTROKES	COMMENTS
==============================			
LINE6= 20,000.		[R/S]*	\$20,000.00 or \$10,000.00 if married filing separately.
LINE7= 87,000.		ER/S]*	Line 6 from line 5.
LINE8= 40,000.		ER/S]*	The smaller of line 7 and \$40,000 (\$20,000 if married filing separately).
LINE9= 47,000.		ER/S]	Line 8 from line 7.
LIN10= 4,000.		[R/S]*	10% of line 8.
LIN11= 9,400.		[R/S]*	20% of line 9.
LIN12= 13,400.		ER/S]*	Sum lines 10 and 11.
LIN13: 0.	123	ER/S]	Line 50 from form 1040.
LIN14: 0.	1,500	[R/S]*	Minimum tax from form 1040.
LIN15: 0.		ER/S]	Tax from recapture of investment credit.
LIN16= 1,623.		ER/S]	Sum lines 13 through 15.
LIN17= 11,777.		ER/S]	Line 16 from line 12. If this value is 0 or less, the program will terminate.
LIN18: O.		ER/S]	Foreign tax credit.
LIN19= 11,777.		[R/S]*	Line 18 from 17.
LIN22= 900.		[R/S]*	Copy of line 3.
LIN23= 60,000.		ER/S]*	2/3 of line 4b.
LIN24= 0.		ER/S]*	Line 23 from 22.
LIN25= 0.		ER/S]*	Schedule value.
LIN26: 0.		ER/S]	Line 49 form 1040.
27,20= 0.		[R/S]*	The smaller of lines 25 and 26.
LIN21= 11,777.		[R/S]*	Alternative minimum tax (line 20 from line 19).
11,777.			Superfluous value left in the X-register.

* [R/S] in this instance is not necessary if a printer is attached.

Alternative Minimum Tax Computation

See instructions on back.

► Attach to Forms 1040, 1040NR, 1041 or 990-T (Trust).

OMB No. 1545-0227

19**82** 34

Name(s) as shown on tax return

6251

Department of the Treasury

Internal Revenue Service

Identifying number

			1	50 44 01
1	Adjusted gross income from Form 1040 or Form 1040NR, line 33 (see instruct	ctions)	• • <u>-</u>	
2	Deductions (applies to individuals only):	0 18 700		
	a Amount from Form 1040, line 34a or 34b, or Form 1040NR, line 36 .	<u>Za 60,700</u>		
	b On your 1982 Form 1040, if you checked Filing Status box 1 or 4, enter \$2,300 3, enter \$1,700	2b 3,400		
	c Multiply \$1,000 by the total number of exemptions on Form 1040, line 6e	20 7,000		
	d Add lines 2a through 2c (estates and trusts, enter zero)		2d	79,100
3	Subtract line 2d from line 1		3	900
4	Tax preference items:			
	a Adjusted itemized deductions	4a 16,100		
	b Capital gain deduction SCM P.	4b 90,000		
	c Add lines 4a and 4b		4c	106,100
5	Alternative minimum taxable income (add lines 3 and 4c)		. 5	107,000
6	Enter \$20,000 (\$10,000 if married filing separately, or an estate or trust).		6	20,000
7	Subtract line 6 from line 5. If zero or less, do not complete the rest of this for	orm	7	87.000
8	Enter the smaller of line 7 or \$40,000 (\$20,000 if married filing separately.			
-	or an estate or trust)	8 40,000		
9	Subtract line 8 from line 7	9 47,000		
•				
10	Enter 10% of line 8	10 4.000		
11	Enter 20% of line 9	11 9 400		
••		1		
12	Add lines 10 and 11		12	13.400
13	Amount from Form 1040, line 50* (estates and trusts—see instructions)	13 123		
14	Minimum tax from Form 1040 1040NR 1041 or 990-T	14 1.500		
15	Tax from recenture of investment credit	15		
16	Add lines 13 through 15		16	1.623
17	Subtract line 16 from line 12 If zero or less do not complete the rest of the	· · · · · ·	17	11 777
10	Foreign tay credit (see instructions)		18	
10	Subtract line 18 from line 17 If line 18 is more than line 17 enter zero		19	11. 777
20	Credite allowed against alternative minimum tay from Part II line 27		20	-0-
20	Alternative minimum tax (subtract line 20 from line 10) If zero or less enter			
21	Form 1040, line 53 or Form 1040NR, line 54 (estates and trusts—see instru-	ctions).	21	11.777
		-		
P	art II Computation of Credits Allowed Against Alternative Minim	um Tax		
22	Enter amount from line 3 above		22	900
23	Enter 6626% of line 4b		23	60.000
24	Subtract line 23 from line 22		24	-0-
25	Figure this line from one of the schedules below on the amount reported in	line 24	25	-0 -
26	Credits other than Foreign Tax Credit, from Form 1040, line 49. (See instruc	tions.)	26	-0 -
27	Enter line 25 or line 26, whichever is smaller. Enter here and on line 20 above	B	27	-0 -
S	ingle, Married Filing Jointly, Qualifying Widow(er), or Head of Household	Married, Filing Separate	elv. or Estate o	· Trust
lf ti	he amount on line 24 is: Enter on line 25: If the amount on	line 24 is:	Enter on line 2	5:
	Not over \$20.000 -0- Not over \$1	0.000	-0-	
	Over But not of the	But not	•	of the
	over amount over	over		amount over
	\$20,000 \$60,000 10% \$20,000 \$10,000	\$30,000	10%	\$10,000
	\$60,000 - \$4,000 + 20% \$60,000 \$30,000	-	\$2,000 + 200	% \$30,000
-			· · · · · · · · · · · · · · · · · · ·	

For Paperwork Reduction Act Notice, see back of form.

Form

turn

Part I Computation of Alternative Minimum Tax

USER INSTRUCTIONS

INS	TRUCTIONS	INPUT	KEYSTROKES	DISPLAY
1)	At a minimum, load the following programs: "AM" (Alternate Minimum Tax) "O" (misc. routines).		[shift][GTO] [shift][GTO]	
2)	Allocate data registers (minimum 55).		[XEQ] "SIZE" 055	
3)	Select an appropriate display format.		[shift][FIX] n	
4)	Select either "prompting" (flag O set) or "non-prompt- ing" (flag O clear) mode. pressing [XEQ] "P" toggles between these modes.		CXEQJ "P"	
5)	Run the program.		EXEQJ "AM"	ALT MIN TAX
6)	This display identifies the program.		[R/S]*	STATS: X
7)	Enter one of lines 1–5: your filing status.	status	[R/S]	EXMPT: ×
8)	Enter line 4e from form 1040: total number of exemptions claimed.	exemptions	[R/S]	LINE1: ×
9)	Enter line 32 of form 1040: adjusted gross income.	AGI	[R/S]	LIN2a: x
10)	Enter line 34 of form 1040.	line 34	[R/S]	LIN2b= x
11)	Output of zero bracket amount.		[R/S]*	LIN2c= x
12)	Output of exemptions * 1000.		[R/S]*	LIN2d= x
13)	Output of the sum of 2a through 2c.		[R/S]*	LINE3= x
14)	Subtraction of line 2d from line 1.		[R/S]*	LIN4a: x
15)	Output of adjusted itemized deductions.		[R/S]	LIN4b: x

INS	TRUCTIONS	INPUT	KEYSTROKES	DISPLAY
16.	Output of capital gain deduction.		[R/S]	LIN4c= x
17.	Output of the sum of lines 4a and 4b.		[R/S]*	LINE5= x
18.	Output of alternative minimum taxable income: the sum of lines 3 and 4c.		[R/S]*	LINE6= ×
19.	Output \$20,000.00 or \$10,000.00 if married filing separately.		[R/S]*	LINE7= ×
20.	Output the difference between Line 6 and line 5.		[R/S]*	LINE8= ×
21.	Output the smaller of line 7 and \$40,000 (\$20,000 if married filing separately).		[R/S]*	LINE9= ×
22.	Output of line 8 from line 7.		[R/S]*	LIN10= ×
23.	Output 10% of line 8.		[R/S]*	LIN11= ×
24.	Output 20% of line 9.		[R/S]*	LIN12= x
25.	Output the sum of lines 10 and 11.		[R/S]*	LIN13: x
26.	Enter line 50 from form 1040.	line 50	[R/S]	LIN14: x
27.	Input minimum tax from form 1040.	min. tax	[R/S]	LIN15: X
28.	Enter tax from recapture of investment credit.	tax	[R/S]	LIN16= x
29.	Output the sum of lines 13 through 15.		[R/S]*	LIN17= x
30.	Output of line 16 from line 12. If this value is 0 or less, the program		[p/s]+	I TN18. V
74	witt terminate.			LINIO: X
51.	Enter foreign tax credit.	credit	LK/SJ	LIN19= X

 32. Output the difference between line 18 and 17. 33. Output a copy of line 3. 34. Output 2/3 of line 4b. 35. Output the difference between line 23 and 22. 36. Output the value from the schedule at the bottom of the form. 37. Enter line 49 from form 1040. 38. Output the smaller of lines 25 and 26. 39. Output alternative minimum tax (line 20 from line 19). 40. Superfluous value left in the X-register. 	INST	RUCTIONS	INPUT	KEYSTROKES	DISPLAY
 33. Output a copy of line 3. ER/S]* LIN23= x 34. Output 2/3 of line 4b. ER/S]* LIN24= x 35. Output the difference between line 23 and 22. ER/S]* LIN25= x 36. Output the value from the schedule at the bottom of the form. ER/S]* LIN26: x 37. Enter line 49 from form 1040. ER/S] 27,20= x 38. Output the smaller of lines 25 and 26. ER/S]* LIN21= x 39. Output alternative minimum tax (line 20 from line 19). ER/S]* x 	 32.	Output the difference between line 18 and 17.		[R/S]*	LIN22= x
34. Output 2/3 of line 4b.ER/S]*LIN24= x35. Output the difference between line 23 and 22.ER/S]*LIN25= x36. Output the value from the schedule at the bottom of the form.ER/S]*LIN26: x37. Enter line 49 from form 1040.ER/S]27,20= x38. Output the smaller of lines 25 and 26.ER/S]*LIN21= x39. Output alternative minimum tax (line 20 	33.	Output a copy of line 3.		[R/S]*	LIN23= x
 35. Output the difference between line 23 and 22. 36. Output the value from the schedule at the bottom of the form. 37. Enter line 49 from form 1040. 38. Output the smaller of lines 25 and 26. 39. Output alternative minimum tax (line 20 from line 19). 40. Superfluous value left in the X-register. 	34.	Output 2/3 of line 4b.		[R/S]*	LIN24= x
 36. Output the value from the schedule at the bottom of the form. 37. Enter line 49 from form 1040. 38. Output the smaller of lines 25 and 26. 39. Output alternative minimum tax (line 20 from line 19). 40. Superfluous value left in the X-register. 	35.	Output the difference between line 23 and 22.		[R/S]*	LIN25= ×
 37. Enter line 49 from form 1040. [R/S] 27,20= x 38. Output the smaller of lines 25 and 26. [R/S]* LIN21= x 39. Output alternative minimum tax (line 20 from line 19). [R/S]* x 40. Superfluous value left in the X-register. 	36.	Output the value from the schedule at the bottom of the form.		[R/S]*	LIN26: x
 38. Output the smaller of lines 25 and 26. ER/S]* LIN21= x 39. Output alternative minimum tax (line 20 from line 19). ER/S]* x 40. Superfluous value left in the X-register. 	37.	Enter line 49 from form 1040.		[R/S]	27,20= x
 39. Output alternative minimum tax (line 20 from line 19). ER/S]* x 40. Superfluous value left in the X-register. 	38.	Output the smaller of lines 25 and 26.		[R/S]*	LIN21= x
40. Superfluous value left in the X-register.	39.	Output alternative minimum tax (line 20 from line 19).		[R/S]*	x
	40.	Superfluous value left in the X-register.			

* [R/S] in this instance is not necessary if a printer is attached.

PROGRAM DETAIL -

The Alternate Minimum Tax program is 236 steps and 554 bytes (78.9 registers) long. It requires one other program: the miscellaneous routines program at 233 bytes. At a minimum, 55 data registers are needed, totalling 167.4 registers for operation.

The program has one entry point, global label "AM".

Aside from the flags manipulated by the subroutines called, the program itself manipulates the following flags:

The data registers used by the form 1040 program are preserved with. The following data registers are used:

00 = register index for data manipulation 02 = form 1040, line 6e: total exemptions 01 = lines 1 through 5, form 1040: filing status 17 = line 1: adjusted gross income from 1040 23 = line 26: form 1040 line 49 27 = accumulator index 28 = line 2a: form 1040 line 34 29 = line 2d: total deductions: line 3: line 2d from line 1 30 = line 5: alternative minimum taxable income; line 7: line 6 from line 5; line 12: line 10 + line 11 31 = line 13: form 1040 line 50 32 = line 15: tax from recapture of investment credit 33 =line 16: sum of lines 13 through 15 34 = line 17: line 16 from line 12 35 = line 18: foreign tax credit 36 = line 19: line 18 from line 17 37 = line 20, 27: credits allowed against alternative minimum tax 38 = line 21: alternative minimum tax 39 = line 25: value from schedule on form 44 = line 14: minimum tax from 1040 line 50 (from "MN") 50 = line 4a: adjusted itemized deductions (from sched. A) 54 = line 4b: capital gain deduction (from sched. D)

LISTING	CONNENTS	LISTING	COMMENTS
01+LBL "AM"	accumulator rog	52 RCL 50	line 4a
02 29	accumulator reg.	53 RND	
03 SF 12	print double wide	54 +	line 4a + 4b
U4 "HLI MIN		55 XEQ "V" (output line 4c
	initialize	56 "LINED"	1 .
00 XEQ 0 07 VEG "7"	status prompt	57 KUL 30 8	accumulator
00 AEQ 2 07 "EVMPT"	status prompt	38 AEW Y (59 "ITNEC"	output line 5
07 EANT 1 09 YEQ "7"	exemption prompt	60 1	
00 ALC L 09 DIV	erremperent brempe	61 SIGN 1	in lacty
10 17	line 1	62 RDN	I III IdSLX
11 STO 00	reset pointer	63 3	
12 "LINE1"	• • • • • •	64 RCL 01 .	status
13 XEQ "Z"	line 1 prompt	65 X=Y?	status = 3?
14 ADV		66 ISG L	in lastx
15 28	form 1040 line 34	67 CLD .	lummy step
16 STO 00	reset pointer	68 CLX	
17 "LIN2a"	prompt and cum	69 2 E4	
18 XEQ "Y"	line 25	70 LASTX	
19 "LIN26"	det zero brkt amt	71 /	
20 XEQ "W"	enable accumulator	72 XEQ "V" (
21 SF 06	output line 2b	73 "LINE7" 74 DA	
22 AEQ A		74 KT 76 V/NV	
23 LIN20 24 RCI 02	exemptions	75 6 -	
25 1 F3	·	77 STO 30	line 6 from line 5
26 *		78 XEQ "X"	
27 SF 06	enable accumulator	79 ADV	output line /
28 XEQ "X"	output line 2c	80 X<0?	
29 "LIN2d"		81 GTO 01 🦂	end program
30 RCL 29	accumulator	82 "LINE8"	
31 XEQ "X"	output line 2d	83 1	
32 "LINE3"		84 SIGN 1	l in lastx
33 RCL 17	line 1	85 RDN	
34 RNU			
30 85 21	line 2d from line 1	87 KUL 01 00 V-V2	
30 - 77 910 29			status = 3?
		90 CLD	2 IN LASTX
39 XFQ "V"	output line 3	91 CLX	unmy step
40 ADV		92 4 E4	
41 "LIN4a"		93 LASTX	_
42 50	adj item deductions	; 94 / ²	20 or 40 K
43 STO 00	-	95 R↑	line 7
44 30	new accumulator	96 X>Y?	
45 STO 27	line 4a prompt &	97 X<>Y	
46 XEW "Y"	sum	98 XEQ "V" (ourput the smaller
47 "LIN40" 40 54	conital gains ded	99 ENIERT 100 " TNEQ"	
40 J4 49 CTO 00	capital yains ded	100 LINE7 101 PCI 70 ¹	line 7
50 XFO "Y"	line 4b prompt 8	102 RND	
51 "LIN4c"	sum	103 X<>Y	

LISTING	COMMENTS	LISTING	COMMENTS
104 – 1 105 XEQ "V" c 106 "LIN10" 107 X<>Y 108 .1	ine 8 from line 7 output line 9	156 RCL 54 157 RND 158 2 159 * 160 3	line 4b
109 * 1 110 XEQ "V" c 111 "LIN11"	0% of line 8 output line 10	161 / 162 XEQ "V" ⁽ 163 "LIN24"	output 2/3 or 4b
112 X<>Y 113 .2 114 * ²	10% of line 9	164 - 165 X<0? 166 CLX	line 23 from line 22
115 XEQ "V" 4 116 "LIN12" 117 + 1	output line 11 ine 10 + line 11	167 XEQ "V" (168 "LIN25" 169 1	output line 24
118 STO 30 119 XEQ "X" c 120 ADV	output line 12	170 SIGN ¹ 171 RDN 172 3	l in lastx
121 "LIN13" 122 33 r 123 XEQ "T"	new accumulator	173 RCL 01 s 174 CF 09 175 Y=Y2	status
124 31) 125 STO 00 126 XEQ "Y"	line 13	176 SF 09	status = 3? status = 3?
127 "LIN14" р 128 44 129 STO йй р	prompt & sum line 13 linimum tax from	179 CLD c 180 LASTX	dummy step
130 XEQ "Y" 131 "LIN15" p 132 32	I'MNI' Prompt & sum	182 * 183 2 E4	rine 24
133 STO 00 1 134 XEQ "Y" p 135 "LIN16"	line 15 Frompt & sum	184 ANZ/ 185 X<=Y? 186 GTO 00	less than min? step 210
136 RCL 33 137 XEQ "X" c	output line 16	187 X(2) 188 - 3 189 4 E4	amount over 20000
139 RCL 30 1 140 RND 141 X45Y	line 12	190 X<>Y 191 X<=Y? ^t 192 GTO 02 ^s	oetween min & max? step 204
142 - 143 STO 34 143 STO 34	line 16 from line 12 output line 17	193 X(2) 194 - 6 195 10	amount over 60000
145 X<0? 146 GTO 01 147 "LIN18"	and program	196 FC/ 09 5 197 ST+ X 2 198 %	20
148 XEQ "Z" i 149 "LIN19" 150 YEQ "S" /	nput line 18	1992E3 200 FC? 09 s 201 ST+ X 4	status <> 3? +000
150 AEW 5 (151 ADV 152 "LIN22"	line 18	202 + 203 GTO 03 204♦LBL 02	
153 KCL 29 154 XEQ "V" (155 "LIN23"	output line 22	205 5 206 FC? 09 207 ST+ X	

LISTING	COMMENTS	LISTING	COMMENTS
208 % 209 GTO 03 210+LBL 00 211 CLX 212+LBL 03 217 CE 09	step 212 if under 20000		
213 CF 07 214 STO 39 215 XEQ "V" 216 "LIN26"	line 25 output line 25		
217 23 218 STO 00	form 1040 line 49		
219 XEQ "Z" 220 "27,20"	prompt for line 26		
221 RCL 39 222 RND 223 X>Y? 224 X<>Y 225 STO 37	line 25		
226 XEQ "V" (227 ADV 228 "LIN21" 229 38 230 STO 00	output the lesser of line 25 and 26		
231 RDN 232 XEQ "S" 233+LBL 01 234 ADV 235 ADV 236 END	line 20 from line	19	

PROGRAM REGISTERS NEEDED: 79

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AM





AM

PROGRAM DESCRIPTION

COMMON ROUTINES

PURPOSE -

The purpose of this program is to provide routines common to all programs in the package.

FEATURES/WARNINGS -

Most users will never want or need to know anything about this set of routines other than that they must reside in memory before any of the other tax programs can be run. For this reason, no description of the routines resides in this section. The following section deals with information important to the user who needs to know more about the routines.

PROGRAM DETAIL -

The routines program is 111 steps and 235 bytes (33.6 registers) long. It requires no other programs, though certain routines require each other. The routines access very few registers directly, only ROO and R27 are accessed in this way. The program, because of its use of register 27, "requires" the allocation of 28 data registers though certain routines are capable of accessing any data register and others access none.

The program has 11 entry points: global labels "0", "P", "Q", "S", "T", "U", "V", "W", "X", "Y" and "Z". The labels are intentionally short to save space in their declarations and, more importantly, in their calling. This results, though, in their being nonrepresentative of the routines' functions. There-fore, their descriptions follow.

- "O" This routine places a separator ("=========") on the printout. Its main purpose is to place this separator between the form 1040 program output and that of schedules A and G. The routine tests flag 55. The contents of stack register T and the ALPHA register are destroyed.
- "P" This routine selects between "input" and "non-input" modes. This is accomplished simply by toggling flag OO.
- "Q" This routine takes the first character of the alpha register contents and queries the user as to whether the tax schedule corresponding to the character is to be run. The prompt comes up in ALPHA mode, and only the character "Y" will cause the execution of the indicated program. Any other input will not cause the specified routine to be run. The routine destroys the contents of the stack and the ALPHA register.
- "U" This routine performs the most common program initialization functions. The ALPHA register is assumed to contain a desirable display/printout value. The X-register must contain either the number of the accumulator

register (the current register in which some running total is to be kept) or zero. A zero indicates no accumulator. The text string "STATS" is left in the ALPHA register since, in most cases, this is the first prompt to come up in a program

- "T" Stores the location of the accumulator register in register 27, and clears it. Routine "U" may also access this routine.
- "W" This routine calculates to user's zero bracket amount (the largest sum on which zero taxes can be paid). Since the filing status of the user is necessary for the calculation, register O1 is accessed. The routine consumes the X-, Y-, and L-registers.
- "S" This routine takes the register address in register 00 and subtracts two from it. The indicated register is then recalled and the previous X-register is subtracted from it. If the result is negative, the Xregister is cleared. This corresponds to the tax form statement "subtract line B from line A, if B is greater than A then enter 0." The optionally (flag 06 clear) stores the result in the register specified by register 00 and jumps to the "X" routine.
- "V", "X", "Y" and "Z" are all entry points to the same routine.
- "V" and "X" are used for output. "V" outputs with no register OO increment while "X" increments. The output routines normally store no values but expect the line label in the ALPHA register and the line value in X. If flag O6 is set before the routine is entered, the routines will accumulate the line value in the currently specified register.
- "Y" and "Z" are used for input. "Z" performs the input prompt without adding the received value to that in the accumulator. "Y" performs the accumulation. The routines recall the last specified value for the current line and display its value with the line name (taken from the ALPHA register). The value in the X-register after the prompt (new or old) is then stored, rounded and accumulated (if specified). The register index is incremented, if specified.

The following flags are manipulated:
The following data registers are used directly:

00 = register index for data manipulation 27 = accumulator pointer

PROGRAM LISTING

LISTING	COMMENTS	LISTING	COMMENTS
01+LBL "O"	print divider	51 GTO IND	
02 "====="		01	based on status
03 ASTO T	dup ALPHA contents	52+LBL 05 3	status = 5
04 ARCL T		53+LBL 02 3	status = 3
05 FS? 55	printer?	54 11	
06 AVIEW		55 +	\$2800
07 RTN		56+LBL 04	status = 4
08+LBL "P"	input mode togale	57+LBL 01	status = 1
09 FC?C 00	1	58 6	
10 SF 00		59 +	\$3400
11 RTN		60+1 BI 03	status = 3
12+LBL "Q"	program option	61 1 E2	status – j
13 ASTO T	query	62 *	
14 "⊢S"	. ,	67 RTN	
15 ASTO Z	subroutine label	24 ≜i Ri "S" ³	subtract routine
16 "SCHED "		25 PC1 00	register index
17 ARCI T	schedule name	63 KCL 00 77 9	5
18 " - 7"	scheddre fiame		two lines back
19 000		67 - 20 DCL IND	line value
20 STOP	stop for input	58 KLL IND	
20 3101	stop for input		index
21 HOLL 22 OCTO V	USAR RASPORSA	69 X()Y	dispose of index
22 HJIO A 37 HVH	user response	70 RUN	last line value
20 I 04 00TO V		$\frac{71}{2} \times \frac{7}{2}$	last line value
24 HOTO T OF V-VO		72 -	
23 A-19 26 CIO IND	response = "i"?	73 X(0?	
26 GIU IND 7	call routine	74 CLX	. 0
2 27 DTU		75 FC? 06 \$	store?
ZT KIN		76 STO IND S	store in current
28+LBL 0		00	line
29 LF 00 70 CF 07	Input/output flag	77 GTO 06 d	output
30 LF 06	store accum. flag	78+LBL "V" d	output/no incre-
31 LF 08	increment flag	79 SF 08	ment
32 CF 09	ABS flag	80+LBL "X" (output w/incre-
33 SF 21	enable printer	81 + LBL 06	ment
34 HUV		82 SF 05 🔤 🛉	from "S"
35 HVIEW	program identifier	83 "⊢= " o	output flag
36 HUV		84 GTO 00	indicates output
37 CF 12	single wide print	85+LBL "Y"	step 100
38 1	filing status	86 SF 06	accumulate flag
39 510 00		87+LBL "Z"	nput no/accum.
40 RUN	accumulator index	88 CF 05	
41 "SIHIS"		89 CF 08	increment reg ind
42 X=0?	no accumulator?	90 "H: "	ndicates input
43 RIN		91 RCL IND	last line value
44+LBL " "	accumulator init.	00	
45 \$10 27	store index	92 ARCL X	on-input mode?
46 ULX		93 FC? 00 '	ion input mode:
47 SIU IND	zero accumulator	94 PROMPT s	store/restore
27		95 STO IND	value
48 RTN		00	
49 ◆ LBL "₩"	zero brkt amount	96 ASTO T	line name
50 17	\$1700	97 CLA	

PROGRAM LISTING

LISTING	COMMENTS	LISTING	COMMENTS
98 ARCL T 99 "⊢ " 100+LBL 00 ^C 101 ARCL X ¹ 102 FC? 55 ⁿ 103 FS?C 05 ^O 104 AVIEW 105 CLD 106 RND	common entry ine value no printer? output?		
107 FS?C 06 i 108 ST+ IND a 27	ncrement? ccumulate?		
109 FC?C 08 i 110 ISG 00 i 111 END	ncrement? ncrement reg. ind	ex	

PROGRAM REGISTERS NEEDED: 34

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*Some books require additional memory modules to accomodate all programs.

1982 TAXES

COMPUTING THE AMOUNT OF TAX ON ANY AMOUNT OF TAXABLE INCOME, AT EITHER 1982 OR 1983 TAX RATES FORM 1040 ITEMIZED DEDUCTIONS (Schedule A) INCOME AVERAGING (Schedule G) CAPITAL GAINS AND LOSSES (Schedule D) CAPITAL LOSS CARRYOVER (Schedule D) MINIMUM TAX (Form 4625) ALTERNATIVE MINIMUM TAX (Form 6251)

