

HP 35s



F2215AA-90001 HP

www.register.hp.com :

" "

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Hewlett- Packard

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San Diego, CA 92127-1899
USA

2008 /

■

■
■

.1

1-1		.1
1-1		
1-1		
1-1		
1-2		
2-1	Shift	
3-1		
3-1	(Cursor)	
4-1	 /	
6-1		
8-1		
9-1	ALG RPN /	
11-1	()	
12-1	.....	
15-1	.....	
15-1	.....	
15-1	 /	
17-1	Cursor /	
17-1	 /	
18-1	.....	
18-1	.....	
19-1	.....	
21-1	.....	
23-1	(,) (.)	

25-1SHOWing 12
 26-1
 26-1
 27-1()
 28-1
 28-1
 29-1 /
 1-2 : RPN .2
 1-2
 3-2 Y X
 3-2X /
 3-2 /
 4-2 Y X
 5-2 -
 6-2ENTER
 7-2 /
 8-2LAST X
 9-2LAST X
 10-2LAST X
 12-2RPN /
 12-2 /
 14-2
 14-2
 16-2
 1-3 / .3
 2-3
 4-3 /

4-3	MEM	/	
4-3	VAR	/	
6-3	.....		
6-3	.....		
7-3	.....	/	
8-3	.....		x
9-3	"J" "I"		
1-4	.....		.4
1-4	.....		
2-4	.....		
2-4	.....	/	
3-4	.....		
3-4	.....	π	
4-4	.....	/	
4-4	.....		
6-4	.....		
6-4	.....		
8-4	.....		
10-4	.....		
10-4	.....	/	
13-4	.....		
13-4	.....	/	
14-4	.....		
15-4	.....	/	
15-4	Factorial	/	
15-4	Gamma		
15-4	.....	/	
17-4	.....	/	

1-5	.....	.5
1-5	.....	
2-5	.....	
2-5	.....	/
3-5	.....	
4-5	.....	/
4-5	r	/
6-5	.....	/
8-5	.....	
8-5	.....	
9-5	.....	
10-5	.....	
1-6	.....	.6
1-6	.....	
3-6	.....	
4-6	.....	
4-6	.....	
5-6	.....	
5-6	.....	
6-6	.....	/
6-6	.....	
8-6	.....	/
9-6	.....	/
10-6	.....	
11-6	.....	ENTER
12-6	.....	XEQ
13-6	.....	

14-6	.....	/	
14-6	.....	/	
16-6	.....		
19-6	.....	/	
19-6	.....	/	
1-7	.....		.7
1-7	.....		
7-7	SOLVE	/	
7-7	.....	/	
8-7	 SOLVE	/	
8-7	SOLVE		
12-7	.....		
1-8	.....		.8
2-8	(ò FN)		
6-8	.....		
6-8	.....		
6-8	.....	/	
8-8	.....		
1-9	.....		.9
2-9	.....		
2-9	.....		
5-9	.....		
7-9	.....		
8-9	.....		
1-10	"Vector"		.10
1-10	.....		
6-10	.....		

7-10	.....			
8-10	.....		/	
1-11	.....	/		.11
4-11	16 8 2	/		
6-11	.....		/	
6-11	.....			
7-11	.....		/	
8-11	.....			
1-12	.....			.12
1-12	.....	/		
2-12	.....	/		
2-12	.....	/		
2-12	.....	/		
4-12	.....			
4-12	.....	/		
6-12	.....			
7-12	.....			
7-12	.....	/		
10-12	.....	/	/	
11-12	.....	/		
11-12	.....			
12-12	.....			
				.2
1-13	.....			.13
3-13	.....			
3-13	.....	/		

4-13(RTN LBL)

4-13 ALG RPN

5-13 /

6-13

7-13 / / /

8-13

10-13

10-13(XEQ)

11-13

12-13 /

13-13 / INPUT

15-13 / VIEW

16-13()

18-13

19-13

19-13

19-13 / /

19-13

20-13

21-13

21-13 /

22-13

22-13(MEM) /

23-13 /

23-13

24-13

25-13BASE

25-13	.....	/
25-13	.....	
26-13	.....	/
1-14	.....	.14
1-14	 ()	
1-14	(XEQ, RTN)	
2-14	.....	
4-14	(GTO)	
5-14	.....	GTO
5-14	.....	GTO
6-14	.....	
7-14	(x?y, x?0)	
9-14	.....	/
16-14	.....	
17-14	(GTO)	
18-14	(DSE, ISG)	
20-14	 /	/
20-14	"J" "I"	
21-14	(J) (I)	/
23-14	(I)/(J)	
23-14	(I)/(J)	
1-15	.....	.15
1-15	.....	
6-15	.....	SOLVE
7-15	.....	
10-15	.....	
11-15	.....	/

1-16	.....	.16
1-16	.....	
11-16	 / - /	
18-16	.....	

1-17	.....	.17
1-17	.....	
7-17	.....	
11-17	" Vectors "	

.3

A-1	.....	A.
A-1	.....	
A-1	.....	
A-2	.....	
A-3	.....	
A-4	.....	
A-5	.....	
A-7	.....	
A-8	.....	
A-12	.....	
A-12	.....	
B-1	 /	B.
B-1	.....	
B-2	Resetting	
B-3	 /	
B-4	 /	
B-5	 /	
B-5	.....	
B-6	LAST X /	

B-7 /

C-1:ALG **C.**

C-1ALG

C-2ALG

C-2

C-3 /

C-3

C-4

C-4

C-4 /

C-5

C-6

C-7 /

C-7 /

C-8

C-8

C-1016 8 2 /

C-11 /

D-1 **D.**

D-1 Root

D-3

D-8 SOLVE

D-13

E-1 **E.**

E-1
E-2
E-7

()

F.

G.

H.

1

.ALG

/

RPN

/



.ALG

C

. ☐

ON

☐



☐

.(

OFF

) ☐

10

A

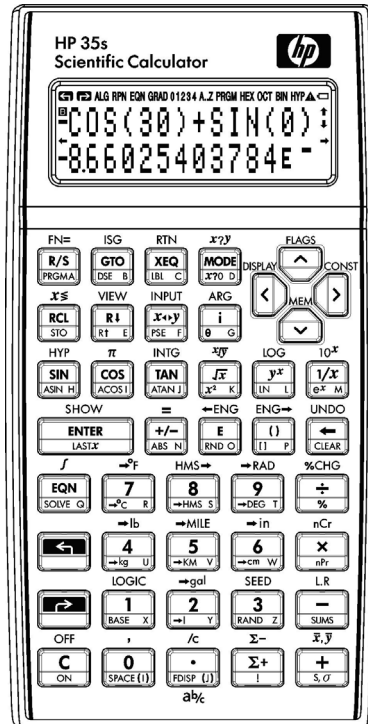
(☐)

/

☐

☐

☐



" shifted "

) " left-shifted "

:

)

.(

) " right-shifted "

(

(

(shift

(

. C

(



■

•



)

•

3

Cursor Keys



() /

(X VARS ALL Σ STK CLVARX) CLEAR) x / (X / 3 (3ALL) CLR ALL? Y N 3PGM 3ALL CLR 3 (3PGM) PGMS? Y N 3EQN 3ALL 3 (3EQN) CLR EQN? Y N / 6 (CLVARX) CLVAR056 : .56	 CLEAR

.HP 35s

12	$\hat{x} \hat{y} rmb$ $/$	L.R.
12	$\bar{x} \bar{y} \bar{x} \bar{y}$ $y \ x$	$\bar{y}, \bar{x}$
12	$sx \ sy \ \sigma x \ \sigma y$	s, σ
4	41 .8-4	CONST
12	$n \ \Sigma x \ \Sigma y \ \Sigma x^2 \ \Sigma y^2 \ \Sigma xy$ $/$	SUMS
12	DEC HEX OCT BIN d h o b (16)	BASE
C 4	SGN INT÷ Rmdr INTG FP IP	INTG
11	AND XOR OR NOT NAND NOR	LOGIC

	.	
14	SF CF FS?	FLAGS
	/ / /	
	."flags" /	
14		$\neq \leq < > \geq =$ x?y
	.Y X	
14		$\neq \leq < > \geq =$ x?0
	. X	
	/	
1, 3, 12	VAR PGM	MEM
	/ ("bytes ") /	
	.(/) /	
4, 1	DEG RAD GRAD ALG RPN	MODE
	. /	
1	FIX SCI ENG ALL. , 1,000 1000 xiy x+y i rθa	DISPLAY
	/	
	(.) .	
	. rθa xiy RPN)	
C	X Y Z T	R↓ R↑
	.ALG /	
	.-T-Z -Y-X-	
1, 3, 6, 12	.	CLEAR
	.5-1	CLEAR

: /

. .1

.2

.()

.() ENTER .3

ENTER

.

SUMS CONST
 < >
 ^ v
 .
 :
 DISPLAY
 DISPLAY .7÷6
 ()
 : : :
 0
 0
 1FIX 2SCI
 3ENG 4ALL [↵] [DISPLAY]
 .DISPLAY
 / FIX [1] or [ENTER]
 .2
 / 0.0000 [4]
 0.0000
 .
 0.0000 [6] [ENTER] [7] [÷]
 0.8571
 0
 8.57142857143E- [↵] [DISPLAY] [4]
 /
 / /
 : /

MEM CLEAR

.5-1



123.5678-

1FIX 2SCI

3ENG 4ALL

123.5678-



1 2 3 . 5 6 7

8



← or C

123.5678-

1FIX 2SCI

3ENG 4ALL

1X 2VARS

3ALL 4Σ

123.5678



1 2 3 . 5 6 7

8



ALG RPN

/

ALG () RPN

.()

(RPN)

./

/

(ALG)

: RPN /

.RPN /

MODE 5 (5RPN)

.()

RPN

PRN /

UNDO ()

()

()

.

2

2

LAXT X

:







UNDO

.

▪
▪
▪

/

/

UNDO ()

UNDO

.CLEAR

UNDO

UNDO ()

:



UNDO

▪
▪
▪





/

)



(

UNDO

0.5+SIN(60)
1.36602540378

. 14
 .RPN / ALG /
 . () E 14



 ALG RPN EQN GRAD 01234 A.Z PRGM HEX OCT BIN HYP 









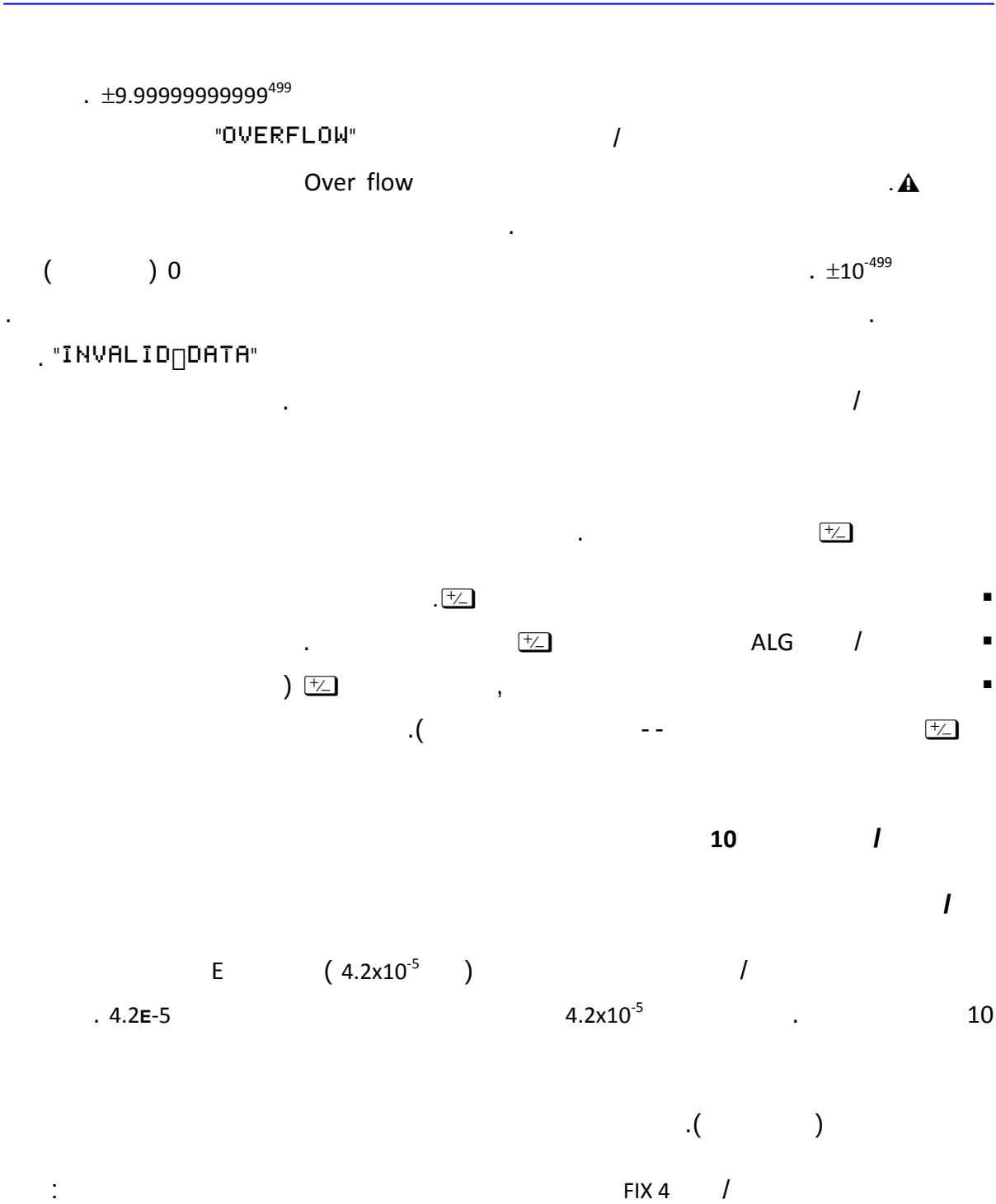


HP 35s

	/		
	" (/) B "		B
5	. "▲▼" ( FDISP) "▼" "▲" / . "▲▼"		▲ ▼
1	Left shift	/	
1	Right shift	/	
1 2	.		RPN
C 1	.		ALG
13	.		PRGM
6			EQN
14	) flags .(11 5		0 1 2 3 4
4	RADIANS () DEG / GRAD		RAD or GRAD
11	DEC . / .(10)		HEX OCT BIN
C 4	. Hyperbolic		HYP

() HP 35 S

	/	
6.1	/	←, →
	.2 1 /	
	.	
	/ 1	
	(...)	
	< > RPN .	
	ALG . /	
	↶ < ↷ >	
	. /	
1, 6, 13	^ v	↑, ↓
	/	
	.	
3	/	A..Z
	.	
1	.	⚠
A	.	☐



: : :

0.000062-

0 0 0 0
0 6 2

0.0001

ENTER

4.2000E-5

0 0 0 0
0 4 2
ENTER

/

() / E

. 1 E 6

1000000

:

6.6261×10⁻³⁴ :

: : :

0
6.6261-

6 0 6 2 6
1

×10^x

0
6.621E-

E

/

6.621E-34
6.621E-34

3 4 +/- ENTER

/

/ 1 E

. / /
 . $\boxed{\leftarrow}$ $\boxed{10^x}$ (10) /
 .(4) $\boxed{y^x}$ () /
 Cursor /
 (-)
 .
 : : :
 : 123- $\boxed{1}$ $\boxed{2}$ $\boxed{3}$
 .
 - , /
 .
 / 11.0905 $\boxed{\sqrt{x}}$ 
 , , ENTER
 , ENTER
 123.0000 $\boxed{1}$ $\boxed{2}$ $\boxed{3}$ ENTER 
 127.0000 $\boxed{4}$ $\boxed{+}$ 
 $\boxed{\leftarrow}$, () /
 کما $\boxed{C}$ $\boxed{\leftarrow}$, () /
 ! . /
 OVER FLOW /
 -9.9999999999 $\times 10^{499}$
 . 9.9999999999 $\times 10^{499}$
 , ■
 . OVERFLOW 9.9999999999 $\times 10^{499}$ -9.9999999999 $\times 10^{499}$

	.(ALG)	RPN	/	HP 35s
)			.	
		.(	)	(
	. [SIN] [LN] [x ²] [1/x]			HP 35s
RPN	.ALG	RPN		
	[ENTER]		.	
.1	2		.2	1
				ALG /
	[ENTER]			. /
	.	.2	1	

:

.ALG

RPN

/

${}_6C_4$ 3+2

:

:

:

) RPN

MODE 5 (5RPN)

.(

.x

3

2

2

2 ENTER 3

3

3-

! Enter

.

0

+

5

.x

4

6

6

6 ENTER 4

4-

5

← nCr

15

.

/

.ALG

MODE 4 (4ALG)

2+3

5

2 + 3 ENTER

.

.

/

nCr(,)

← nCr

6

nCr(6,4)

6 > 4

.4

Enter

nCr(6,4) 15

ENTER

. y^x

$\div$

$\times$

$-$

$+$

ALG

/

y

x

f(x,y)

X

Y

RPN

.X

x

Y

y

/

$\sqrt[3]{8}$

y ($\sqrt[3]{y}$)

x^{th}

.

8

ENTER

3

←

$\sqrt[3]{y}$

(

)

.RPN

.

←

$\sqrt[3]{y}$

3

>

8

ENTER

(

)

ALG

RPN

.ALG

ALG	ALG	RPN	RPN	
^		y^x		y^x
XROOT(,)		$x\sqrt{}y$		$x\sqrt{}y$
IDIV(,)		INT÷		INT÷

. $\times$ $\div$

.y x $x\leftrightarrow y$ RPN
.(y x ") 2

12

. Display

ENG SCI FIX) $\leftarrow$ DISPLAY

. (ALL

. 15

. (FIX) /

" , " " , " 11) 11 FIX

.-FIX (

. (11) (10) $\square$ 11 $\square$ 00 .

"9" "8" "0" "7" 123,456.7089

.FIX 4

(10⁻¹¹) (10¹¹)

.

(SCI) /

SCI

SCI

11 (

11 10 1 0

(10

"6" "4" "3" "2" 1.2346E5

1.2346 × 10⁵ : 10 E 5 . SCI 4

12

(ENG) /

ENG

.(" , " " , ")

- -) 10³

.(

10 . - ENG

. 1 0 11

"6" "4" "3" "2" ,123.46E3

"E" "3" . ENG 4

123.46 x 10³. : 10 (3)

ENG ENG

3

□ □

■ ■
■ ■

□ □

□

•

/

ENG.

 DISPLAY **3** (3EN
G)

) 4

```
0.0000E0
0.0000E0
```

4

.(

12.346E4

```
123.46E3
123.46E3
```

1 2 . 3 4 6
E 4 ENTER

```
123.46E3
123.46E3
```

  ← ENG or
  ENG →

.3

123.46E3
0.12346E6



.3

```
123.46E3
123.46E3
```



(ALL) /

. 12

/ /

•

() ()

■

HP 35s

.()

. . 12,345,678.90
 .RPN . /

: : :

.(/) [DISPLAY] [4] (4RL
 L)

12,345,678.9
 12,345,678.9
 [ENTER]

. /

12,345,678.9 [DISPLAY] [6] (6,
 12,345,678.9

. /

.

12345678.9 [DISPLAY] [8] (810
 12345678.9 00)

. /

12,345,678.9 [DISPLAY] [5] (5.
 12,345,678.9 [DISPLAY] [7] (71,
 000)

(x+yi, x+yi, rθa) a}

x+yi rθa x+yi, xiy /

3+4i

.ALG

3+4i

:

.ALG / (MODE) 4 (4RLG)

3i4 (3) i (4) ENTER

3i4

/

.3i4

. x+yi 3i4 (↵) DISPLAY (.)

3+4i (1) (11x+y i)

.r θ a 3i4 (↵) DISPLAY (.)

53.13° 5 5053.1301023542 (0) (10r θ a) or

(↵) DISPLAY (⌵)

(⌵) (>) ENTER

SHOWing 12

12

FIX 4 "14.8746" 14.8745632019

في ("632019")

(↵) SHOW

SHOW (/)

:

58.5000 (4) 5 ENTER (1) .

(3) x

5.85E1 (↵) DISPLAY (2) (2SCI)

(2)

58.5E0 (↵) DISPLAY (3) (3ENG)

(2)

58.5 (↵) DISPLAY (4) (4ALL)

58.5000

DISPLAY **1** (1FIX)

4

.58.5

0.0171

170940170940

SHOW (hold)

SHOW

HP 35s

c b

a a b/c

HP 35s

. 1<c≤4095 :c 0≤b<c :b

:

) .

.1

.

numerator

.(

/

.2

. denominator

/

/

ENTER

denominator

/

.3

a b/c

$\frac{3}{4}$

12 $\frac{3}{8}$

. RPN

. 12 $\frac{3}{8}$

:

:

:

/

0
12.3

1 2 . 3

.

0.0000
12 $\frac{3}{8}$

. 8

12.3750
12.3750

ENTER

12 $\frac{3}{8}$
12 $\frac{3}{8}$

FDISP

.

. $\frac{3}{4}$

12 $\frac{3}{8}$
0 $\frac{3}{4}$

. 3 . 4

.(0 $\frac{3}{4}$)

. 12 $\frac{3}{8}$ $\frac{3}{4}$

0
13 $\frac{1}{8}$
0
13.1250

+

FDISP

" " 5

()



.()

RPN / / ■

ALG / .

.

.

/ ■

() ▲

▲ .

.

,) 30KB 30 HP 35s

.(

:

MEM

1VAR 2 PGM

nnn mm,mmm

.

nnn

.

Bytes mm,mmm

/ ") / (1VAR)

(2PGM) .(3 "VAR /

.

/

, / (1VAR) / .1

(2PGM)

/ .2

.

/ CLEAR .3

	☐ C	/	.4
		.	/
.		/	
/	) .	/	
	.(B	/ "	
		:	/
CLR ALL? Y N	/	☐ 4 (4ALL)	.1
		.	
		. ☐ < (Y) ☐ ENTER	.2

.RPN /

.

" " 2

.

. HP 35s
RPN

()

.(1956 – 1878) Jan Łukasiewicz

HP

"

"

(Operators)

.

Łukasiewicz

.RPN

:

.

.

.

" "

.

T Z Y X

."

"T

" "

3
2
0.0000 1
3
2
0.0000 1
3
2
0.0000 1

T

Z

Y

X

.

: X

" "

:

.	3	2	1	1-D	■
.	3	2	1	2-D	■
	.3	2	1	3-D	■

.(subroutines)

()

./

Z

T

.T

X

--

.

. Y X

() R↑

" / " R↓ () R↓ R↓

.

X

T

.Y

X

.

T	1		2		3		4		1
Z	2		3		4		1		2
Y	3		4		1		2		3
X	4	R↓ R↓	1	R↓ R↓	2	R↓ R↓	3	R↓ R↓	4

Y X

.(y x) x↔y

x↔y

.

Y X

.Y X

. x↔y /

:(8 × 13) ÷ 9

1 3 ENTER 8 × 9 x↔y ÷

:

. 9 ENTER 1 3 ENTER 8 × ÷

ملاحظة

() T

-



(

/

)

X

.(

)

X

Y

X

/

. 4

3

2

1

3+4-9

T	1		1		1		1
Z	2		1		2		1
Y	3		2		7		2
X	4	+	7	9	9	-	-2
	1		2		3	3	

.

T ()

.

" "

.1

.T

.

" / "

.2

.

.3

Z

T ()

/

■

.

.

X

/

■

.X

/

■

.

/

/

B

ENTER

ENTER

: .4 3 2 1

5+6

2 1

3	+	3	6	ENTER	5	1	T
3		4				2	Z
4		5				3	Y
11		6				4	X
4		3		2	1		

. / .1

.X / .2

. / .3

.T .4

() Y X ENTER

.X

ENTER ENTER 0 : / ENTER

/ . ENTER

. (Row)

ENTER

. ENTER +

(Z T) ENTER

% 50

3 100

						Replicates T – register T /				
	T	1.5		1.5		1.5		1.5		1.5
1 . 5	Z	1.5		1.5		1.5		1.5		1.5
ENTER	Y	1.5	1	1.5		1.5		1.5		1.5
ENTER	X	1.5	0	100	x	150	x	225	x	337.5
ENTER			0							
1			2		3		4		5	

.1
.2
.3
.4
.5

/

() . X /

:x / X /

C .1

← .2

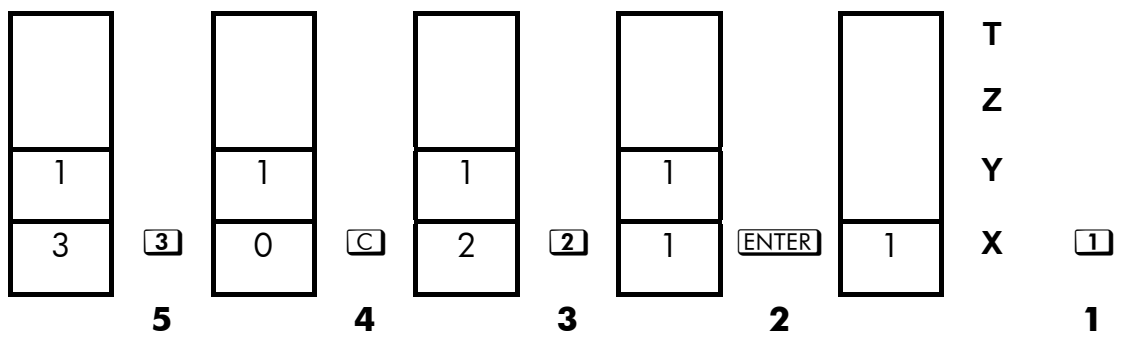
() CLEAR 1 (1x) .3

Z Y X / CLEAR 5 (5STK) .4

.T

2 1 3 1

:



- .1 /
- .2 / .X
- .3 .X
- .4 x /
- .5 .() x

LAST X

- X
- : / LAST X
- /) . /
- .X  LAST.x  .(
- : "last x"
- .1 .
 - .2 .
- . LAST X x / B

LAST X

LAST x

.(

.

... ..

.

:

$$\ln 4.7839 \times (3.879 \times 10^5)$$

!

e^x

LAST x

()

.

LAST x

.(x)

LAST x

.1

LAST

.

.

.2

: .X

LAST x

■

.

.

■

LAST x

.(

/

). .

:

$$304 = 19 \times 16$$

:

□ □

■ ■

:

  LASTx 
 LASTx 
   LASTx 
 LASTx    

1 6 ENTER 1
9 -

1 5 ENTER 1
9 x

1 6 ENTER 1
8 x

LAST X

X

•

()



.  LAST x

/

•

•

$$\frac{96.704 + 52.3947}{52.3947}$$

T	t		t		t
Z	z		z		t
Y	96.7040	5 2 . 3	96.7040		z
X	96.7040	9 4 7	52.3947	+	149.0987

9 6
.
0 4
ENTER

LAST X /

T	t		t
Z	z		t
Y	149.0987		z
X	52.3947	÷	2.8457

LASTx

LAST X 52.3947

:	:	:
.	96.7040	9 6 . 7 0 4 ENTER
.	149.0987	5 2 . 3 9 4 7 +
.	52.3947	LASTx
.	2.8457	÷

8.7) Sirius

(

4.3) Rigel Centaurus

(9.5 × 10¹⁵) c .(

4.3 yr × (9.5 × 10¹⁵ m/yr) :Rigel Centaurus

8.7 yr × (9.5 × 10¹⁵ m/yr) :Sirius

: : :

4.3000 4 . 3 ENTER

Rigel
 . Centaurus
 . c -9.5E15 9 5 E 1
 5
 4.0850E16 X
 . R. Centaurus
 .c 9.5000E15 8 7
 LASTx
 8.2650E16 X
 .Sirius

RPN /

RPN /

.

.7×(3+12)

... (3+12)

15=(3+12)

:7

...

105=7×(15)

. /

HP 35s

:

:

:

.

15.0000

1 2 ENTER 3 +

:

ENTER

.

:	:	:
/	105.0000	7 x

ENTER

(**-** **+**)

:(10+2)÷2

:	:	:
(10+3)	13.0000	3 ENTER 1 0 +
13 2	0.1538	2 x↔y ÷
.13÷2 :		

:[2-(3×7)+14]÷4

:	:	:
(3×7)	21.0000	7 ENTER 3 x
/	33.0000	1 4 + 2 -
33 4	33.0000	4 x↔y
13÷4	0.1212	÷

(4+3)

(6+5)×(4+3)

(6+5)

HP 35s

:	:	:
(4+3)	7.0000	3 ENTER 4 +
(6+5)	11.0000	5 ENTER 6 +
	77.0000	x

$$\frac{\sqrt{(16.3805 \times 5)}}{0.05} = 181.0000$$

1 **6** **.** **3** **8** **0** **5** **ENTER** **5** **x** **$\sqrt{x}$** **.** **0** **0** **5** **$\div$**

$$\sqrt{[(2+3) \times (4+5)]} + \sqrt{[(6+7) \times (8+9)]} = 21.5743$$

2 **ENTER** **3** **+** **4** **ENTER** **5** **+** **x** **$\sqrt{x}$** **6** **ENTER** **7** **+** **8** **ENTER** **9** **+** **x** **$\sqrt{x}$** **+**

$$(10 - 5) \div [(17 - 12) \times 4] = 0.2500$$

1 **7** **ENTER** **1** **2** **-** **4** **x** **1** **0** **ENTER** **5** **-** **$x \leftrightarrow y$** **$\div$**

1 **0** **ENTER** **5** **-** **1** **7** **ENTER** **1** **2** **-** **4** **x** **$\div$**

$$4 \div [14 + (7 \times 3) - 2]$$

7 ENTER 3 × 1 4 + 2 - 4 x↔y ÷

4 ENTER 1 4 ENTER 7 ENTER 3 × + 2 - ÷

x↔y

.(÷ -)

: ()

) ()
.(



:	:	:
14 4	14.0000	4 ENTER 1 4 ENTER
.	-3	7 ENTER 3
.		
.	21.0000	x
.	35.0000	+
.	33.0000	2 -
.	0.1212	÷

: RPN

$$(14 + 12) \times (18 - 12) \div (9 - 7) = 78.0000$$

1 **4** **ENTER** **1** **2** **+** **1** **8** **ENTER** **1** **2** **-** **x** **9** **ENTER** **7** **-** **÷**

$$23^2 - (13 \times 9) + 1/7 = 412.1429$$

2 **3** **↵** **x²** **1** **3** **ENTER** **9** **x** **-** **7** **1/x** **+**

$$\sqrt{(5.4 \times 0.8) \div (12.5 - 0.7^3)} = 0.5961$$

:

5 [.] 4 [ENTER] [.] 8 [X] [.] 7 [ENTER] 3 [y^x] 1 2 [.] 5 [x^{→y}] [=] [÷] [√x]

5 [.] 4 [ENTER] [.] 8 [X] 1 2 [.] 5 [ENTER] [.] 7 [ENTER] 3 [y^x] [=] [÷] [√x]

:

$$\sqrt{\frac{8.33 \times (4 - 5.2) \div [(8.33 - 7.46) \times 0.32]}{4.3 \times (3.15 - 2.75) - (1.71 \times 2.01)}} = 4.5728$$

:

4 [ENTER] 5 [.] 2 [=] 8 [.] 3 3 [X] [↵] [LAST X] 7 [.] 4 6 [=]
 0 [.] 3 2 [X] [÷] 3 [.] 1 5 [ENTER] 2 [.] 7 5 [=] 4 [.] 3 [X]
 1 [.] 7 1 [ENTER] 2 [.] 0 1 [X] [=] [÷] [√x]

3

/

		(30KB)	30 HP 35s
A			.
C "Bank"	B		) . Z
			.(
			:
. ALG	RPN	A 3	
		:	:
	) RPN		MODE 5 (5 RPN)
	.(		
	.(3)	0.0000	3
		3-	
	/	STO-	STO
	.A...Z		
A 3		0.0000	A
	.	3.0000	
) ALG			MODE 4 (4 ALG)
.(		3.0000	
		3→A-	3 STO A
.A...Z	/		
A 3		3→A 3.000	ENTER
.2		0	

ALG

:

:

:

:

1+3÷4▶G

1.7

1 **+** **3** **÷** **4**
500 **▶** **STO** **G** **ENTER**

.(**A...Z**)

/

T Z Y X

T Z Y X

Vectors

.(**RCL**) Recall

(**▶** **STO**) Store

/

HP

.35s

: (X)

.**ENTER**

/

▶ **STO**

:

.**ENTER**

/

RCL

:

.A (6.0221×10^{23})

:	:	:	
.		6.0221E23-	6 0 2 2 1 E 2 3
.	"▶"	6.0221E23▶R-	▶ STO A
		6.0221E23▶R	ENTER
		6.0221E23	
	.A		
	.		
	/		C
	.		
	A...Z	A..Z	RCL
A		R=	A ENTER
		6.0221E23	
.			
.Recall	/		
.		ALG RPN /	/
.	G	1,75	
		ALG	HP35S
	:	:	:
	RCL	G	RCL G ENTER
	A...Z	1.7500	
	.1	/	
	Recall	ALG	
.	1,75 G 15-2×G	.	/
	:	:	:
		15-2×G	1 5 - 2 ×
		11.5000	RCL G ENTER
	.G	RPN	

: : :
 .RPN **MODE** **5** (5RPN)
RCL RPN **RCL**
 /
 .
ENTER 1.7500 **G**
 1.7500

/
 .X **(VIEW)** VIEW /
 =
 VIEW .
 VIEW / **C** **←**

MEM /
(MEM) MEMORY /
 :
 1. VAR 2. PGM
 nnn mm,mmm
 nnn Bytes mm,mmm

.14
VAR /
 Z A
(MEM 1 (1VAR)) VAR

:

.E 5 D 4 C 3
.RPN . / VAR /
:
:
:
/ (2VAR S)
D 4 C 3 4 3 STO C
5 4 STO D
5 5 STO E
.E 5
. VAR / C= MEM 1 (1VAR)
3

^ v ↓ ↑
/

/

. VAR /

D= 4 v

.D=4 :

E= 5 v

.E=5

/ VAR /

.E .

VAR E C= CLEAR

3

C

C

x C=3 5 ENTER

E=5) 5 3

.y (

. [C] [←]
/

VAR /

/

. [→] [CLEAR] [2] (2VARS)

."ALL VARS = 0"

VAR /

[<] [>]

.



/

X

.

.



[→] [STO] [÷] [→] [STO] [x] [→] [STO] [-] [→] [STO] [+]

X

x {÷, x, -, +}

=

.(3) X

A(15)

3

A=12

. [→] [STO] [+]

A 15

A 12

15-3 :

.A-x

T t
Z z
Y y
X 3

T t
Z z
Y y
X 3

/



X

.

X

/

X

.

.

. {÷, ×, -, +} x = x

(3) X

.A 12

x=0,25

.  

.A(12)

( 

:

/

.( A 

A 12

A 12

T t
Z z
Y y
X 3

T t
Z z
Y y
X 0.25

21÷3 :

.12÷ x

: ✓

1 .3 2 1 F E D

:	:	:
	1.0000	1 $\rightarrow$ STO D
	2.0000	2 $\rightarrow$ STO E
	3.0000	3 $\rightarrow$ STO F
E D		1 $\rightarrow$ STO
1		+ D $\rightarrow$ STO
. F	1.0000	+ E $\rightarrow$ STO
		+ F
D	D=	$\rightarrow$ VIEW D
	2.0000	
	E=	$\rightarrow$ VIEW E
	3.0000	
	F=	$\rightarrow$ VIEW F
	4.0000	
/	1.0000	$\leftarrow$
X	.VIEW	

D 3 . 4 3 2 F E F D F E

:	:	:
إحتساب $3 \div D$	1.5000	3 RCL $\div$ D
$3 \div D \times E$	4.5000	RCL $\times$ E
$3 \div D \times E + F$	8.5000	RCL $+$ F

X

(	X	) x	$\rightarrow$ $\rightarrow$
.T	Z	Y	

:

:
: :
.A 12 12.0000 1 2 STO
A ENTER
. x 3 3
.A X 12.0000 X A
.A X 3.0000 X A

A	12
T	t
Z	z
Y	y
X	3

A	3
T	t
Z	z
Y	y
X	12

X A

" J " " I "

.J I :

J I

(J) 0 (I) .(J) (I) /

/

.14 / " "

•

•

.Hyperbolic

) (.2 1
RPN / HP 35s



/

/

.(" ")

grads 400 = radians π 2 = 360

MODE

/

:

none	hexagesimal ()	DEG
RAD	radian	RAD
GRAD	gradient	GRAD



:

x

:	:	
SIN	Sine of x.	.x
COS	Cosine of x.	.x
TAN	Tangent of x.	.x /
ASIN	Arc sine of x.	.x
ACOS	Arc cosine of x.	.x
ATAN	Arc tangent of x.	.x /

π /

. 15
 π

-2.0676×10^{-13}



:

.(	)	128.57°	(5/7)π radians
	:	:	:
RAD	Radians		MODE 2 (2RAD)
.			
.	5/7	0.7143	5 7 ENTER
	.(5/7)π	-0.6235	π x COS
)		-0.6235	MODE 1 (1DEG)
	.(		
	128.57°	-0.6235	1 2 8 5 7 COS
	.(5/7)π		

:

: θ

$\theta = \arctan (y/x).$

DIVIDE BY 0 : y/x $x = 0$

Hyperbolic

: x

:	:	
	Hyperbolic sine of x (SINH).	. x
	Hyperbolic cosine of x (COSH).	. x
	Hyperbolic tangent of x (TANH).	. x /
	Hyperbolic arc sine of x (ASINH).	. x
	Hyperbolic arc cosine of x (ACOSH).	. x
	Hyperbolic arc tangent of x (ATANH).	. x /

(Y) ()
 .(X
 .



:	:
y x	.y %x
y x	(y≠0) . x y

:

.\$15,76 % 6

FIX 2

: : :
 (1FIX)

 15.76
 0.95
 % 6 +) 16.71
 .(

.\$16,12

\$15,76

/

:

:

:

%2,2

16.12

1 6 . 1 2 ENTER

-2.23

1 5 . 7 6

%CHG

.

.FIX 4

-2.2333

DISPLAY 1 (1FIX)

4

%.CHG

:

.



CONST

299792458 m s ⁻¹	Speed of light in vacuum	.	c
9.80665 m s ⁻²	Standard acceleration of gravity	.	g
6.673×10 ⁻¹¹ m ³ kg ⁻¹ s ⁻²	Newtonian constant of gravitation	.	G
0.022413996 m ³ mol ⁻¹	Molar volume of ideal gas	.	V _m
6.02214199×10 ²³ mol ⁻¹	Avogadro constant	.	N _A
10973731.5685 m ⁻¹	Rydberg constant	.	R _∞
1.602176462×10 ⁻¹⁹ C	Elementary charge	.	eV
9.10938188×10 ⁻³¹ kg	Electron mass	.	m _e
1.67262158×10 ⁻²⁷ kg	Proton mass	.	m _P
1.67492716×10 ⁻²⁷ kg	Neutron mass	.	m _n
1.88353109×10 ⁻²⁸ kg	Muon mass	.Muon	m _μ
1.3806503×10 ⁻²³ J K ⁻¹	Boltzmann constant	.	k
6.62606876×10 ⁻³⁴ J s	Planck constant	.	h
1.054571596×10 ⁻³⁴ J s	Planck constant over 2 pi	.pi 2	ħ
2.067833636×10 ⁻¹⁵ Wb	Magnetic flux quantum	.	Φ ₀
5.291772083×10 ⁻¹¹ m	Bohr radius	.	a ₀
8.854187817×10 ⁻¹² F m ⁻¹	Electric constant	.	ε ₀
8.314472 J mol ⁻¹ K ⁻¹	Molar gas constant	.	R
96485.3415 C mol ⁻¹	Faraday constant	.	F
1.66053873×10 ⁻²⁷ kg	Atomic mass constant	.	u
1.2566370614×10 ⁻⁶ N A ⁻²	Magnetic constant	.	μ ₀
9.27400899×10 ⁻²⁴ J T ⁻¹	Bohr magneton	.	μ _B
5.05078317×10 ⁻²⁷ J T ⁻¹	Nuclear magneton	.	μ _N
1.410606633×10 ⁻²⁶ J T ⁻¹	Proton magnetic moment	.	μ _P
-9.28476362×10 ⁻²⁴ J T ⁻¹	Electron magnetic moment	.	μ _e
-9.662364×10 ⁻²⁷ J T ⁻¹	Neutron magnetic moment	.	μ _n
-4.49044813×10 ⁻²⁶ J T ⁻¹	Muon magnetic moment	.	μ _μ

$2.817940285 \times 10^{-15} \text{ m}$	Classical electron radius		r_e
376.730313461Ω	Characteristic impedance of vacuum		Z_0
$2.426310215 \times 10^{-12} \text{ m}$	Compton wavelength		λ_C
$1.319590898 \times 10^{-15} \text{ m}$	Neutron Compton wavelength		λ_{Cn}
$1.321409847 \times 10^{-15} \text{ m}$	Proton Compton wavelength		λ_{Cp}
$7.297352533 \times 10^{-3}$	Fine structure constant		α
$5.6704 \times 10^{-8} \text{ W m}^{-2} \text{ K}^{-4}$	Stefan-Boltzmann constant		σ
273.15	Celsius temperature		t
101325 Pa	Standard atmosphere		p_{atm}
$267522212 \text{ s}^{-1} \text{ T}^{-1}$	Proton gyromagnetic ratio		γ_P
$374177107 \times 10^{-16} \text{ W m}^2$	First radiation constant		C_1
0.014387752 m K	Second radiation constant		C_2
$7.748091696 \times 10^{-5} \text{ S}$	Conductance quantum		G_0
2.71828182846	The base number of natural logarithm(natural constant)		e
Peter J.Mohr and Barry N.Taylor, CODATA Recommended Values of the Fundamental Physical Constants: 1998, Journal of Physical and Chemical Reference Data, Vol.28, No.6, 1999 and Reviews of Modern Physics, Vol.72, No.2, 2000.			:

:

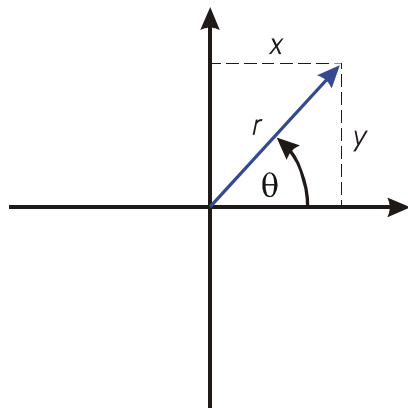
Cursor .1

.2

.3

ENTER (

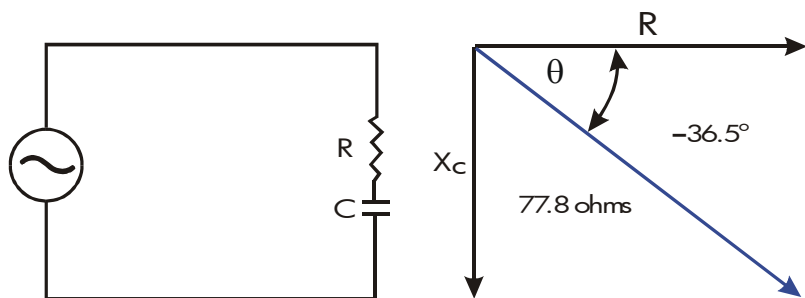
:		.	HP 35s	
.	.	.		■
.	.	gradients	radians	■
.(	)	hexagesimal		■
.	(	kg/lb	cm/in)	■
Shift	.			
	Shift			
	.			
			.	
ALG	.RPN	.		
	.	.		
		I		
θ	.	(x,y)	(r,θ)	
π	$-\pi$	180°	-180°	θ
		.		.
		.grads	200	-200
				radians



$\frac{1}{Z}$ $10.0000030.0000$ $\left[\frac{1}{\square} \right]$ $\left[\text{DISPLAY} \right]$ $\left[\cdot \right]$ $\left[0 \right]$
 θ $(\quad)$ $5.0000053.1301$ $\left[3 \right]$ $\left[i \right]$ $\left[4 \right]$ $\left[\text{ENTER} \right]$
 $\cdot (\quad)$

ohms $77,8$ RC P.C. Bord
 capacitive reactance X_C R $36,5$

X_C, y ohms $R x$ θ
 $\cdot$ ohms



$\frac{1}{Z}$ $\left[\text{MODE} \right]$ $\left[1 \right]$ (1DEG)
 $\left[\frac{1}{\square} \right]$ $\left[\text{DISPLAY} \right]$ $\left[9 \right]$ $(9 \times i \cdot)$
 θ $77.80-36.5$ $\left[7 \right]$ $\left[7 \right]$ $\left[\cdot \right]$ $\left[8 \right]$ $\left[\rightarrow \right]$ $\left[0 \right]$
 r $\left[3 \right]$ $\left[6 \right]$ $\left[\cdot \right]$ $\left[5 \right]$ $\left[+/\square \right]$
 $\cdot$ ohms
 $R x$ $62.5401i-46.2772$ $\left[\text{ENTER} \right]$
 $\cdot$ ohms
 ohms y
 reactance, X_C

hexagesimal / HP 35s

D.MMSSss hexagesimal D.ddd...

MM ddd... D

ss SS

:

/



HMS

/

HMS

.1
.2

/

/

:

FIX 6

7/1

:

:

:

.FIX 6

DISPLAY (1FIX)

7/1

0.000000
0 1/7

34,29

8

0.000000
0.083429

HMS

.FIX 4

0.000000 DISPLAY (1FIX)
0.0834



x

radians

.radians

x

:radians

. π /6 radians

30

:

:

:

.

0.0000

30-

30

.radians

0.0000

0.5236

0.5236

0.5236

. π /6

30

→RAD

: HP 35s

→kg, →lb, →°C, →°F, →cm, →in, →l, →gal, →MILE, →KM

:	:	:	:
0.4536 (kilograms)	()	1 →kg	kg 1 lb
2.2046 (pounds)	()	1 →lb	lb 1 kg
0.0000 (°C)	()	3 2 →°C	°C 32 °F
212.0000 (°F)	()	1 0 0 →°F	°F 100 °C
2.5400 (centimeters)	()	1 →cm	cm 1 in
39.3701 (inches)	()	1 0 0 →in	in 100 cm
3.7854 (liters)	()	1 →l	l 1 gal
0.2642 (gallons)	()	1 →gal	gal 1 l
1.6093(KMS)	()	1 →KM	KM 1 MILE
0.6214(MILES)	(/)	1 →MILE	MILE 1 KM

	/		
	Factorial	/	✓
x ($0 \leq x \leq 253$)	/	$\Sigma+$	$\rightarrow$ $!$
	(		
		Gamma	✓
$x!$	$\cdot$	$\rightarrow$ $!$	
	$(x - 1)$	$\Gamma(x)$	x
	$\cdot$	x	$\cdot \Gamma(x + 1)$
		$\cdot$	/
		/	✓
r	$\rightarrow$ nCr	n	
	/	r	n
		$\cdot$	Γ
		r	
			✓
	$)$	r	nPr
	n	r	n
	$\cdot$	r	$\cdot$
			✓
		/	✓
$\cdot$	$\rightarrow$ $SEED$	/	x
			✓
	$)$	$\rightarrow$ $RAND$	$0 < x < 1$
	Knuth		$\cdot$

The Art of Computer Programming, vol. 2, *Seminumerical Algorithms*, London: Addison Wesley, 1981.

16 -4

|

|



) (6IP)

x
.(14.0000 14.2300

|



) (5FP)

x
.(0.2300 14.2300

.

x
:

r rθa / .1

$\sqrt{x^2 + y^2}$ xiy / .2

$\sqrt{A_1^2 + A_2^2 + \dots + A_n^2} = |A|$ [A1,A2,A3, ...An] .3

:

.

a rθa .1

Atan(y/x) xiy .2



, x . (1SGN) x
1.0000 0.0000 -1.0000



. INTG (4INTG)

:

. /

:

:

:

2.0000 INTG (6IP)

2,47

0.4700 INTG (5FP)

2,47

7.0000 ABS

70

1.0000 INTG (1SGN)

9

-6.0000 INTG (4INTG)

.5,3 -

). .

x (RND)

.

RND /

5 .(12

1

.
 :
 : $\square$
 /
 $\square$ 5 $\square$ 8 8/5 $\square$ 2 $\square$ 3 $\square$ 8 8/3 2
 . $\square$ 0 $\square$ 5 $\square$ 8
 . $\square$ $\square$ FDISP
 /
 /
 .
 RDN -
 .
 RPN /

) -
 .(/
 /
 :
 :
 :
 .
 .
 1,5 1 1/2 $\square$ $\square$ FDISP
 .4/3 1 1 3/4 $\square$ 1 $\square$ 5 ENTER
 x 1.7500 $\square$ 1 $\square$ 3 $\square$ 4 ENTER
 .
 x 1 3/4 $\square$ $\square$ FDISP

.(") .

.

/

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-) . 12

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.(/ /)

.4095 /

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▪

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▼ ▲

. 12

") .

/ 5 .("

" " 3.3333/5 0 3/5▲ 2/3

" / -0 3/5▲ -2/3 .3/5

.3 "

2 2/3▲ 2 2/3 .

12 .

- 12 .

. 12

/

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:

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/ ■

■

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/

.

/

c a b/c

- / / c

.() /

/  

.4095

4095  

.X

.LAST X



 SHOW 

3025 /

: : :

/      

.3025

1202604  888/31

/

25

/

:

1

ALG / .1

/

: /	: /
9 8	
—	/
	/

/ 9 8 /

.(14 /).

. /  **FLAGS** .1
.8 / press  (1SF) / .2

. /  (2CF)

 . /  (3FS?)
. NO YES 

:

. π /
) / 8 / /
.(

:	:	:
/c		    
. /		
. /	0	 
.8 /	3  16/113	
.8 /	0	 FLAGS  (1SF)
/	/ 3  116/819	
819*5=4095		
/ 9	0  0/4095	 FLAGS  (1SF)
. /	3  580/4095	
/	0	 FLAGS  (2CF)
.() /	3  16/113	  FLAGS  (2CF) 

./c / 2.77

2.77		/
/c= 16	/c= 4095	
2 10/13▲ (2.7692)	2 77/100 (2.7700)	/
2 3/4▲ (2.7500)	2 1051/1365▲ (2.7699)	
2 12/16▲ (2.7500)	2 3153/4095▲ (2.7699)	

/c /

16

					* /
2 ¹⁶ /25	2.9999	2 2/3	2.5	2	
2 9/14▼	3▼	2 2/3▲	2 1/2	2	
2 5/8▲	3▼	2 11/16▼	2 1/2	2	/
2 10/16▲	3 0/16▼	2 11/16▼	2 8/16	2 0/16	/
					16 /c *

X RND /

/ /c .

/ . 9 8 /

.(" ") .

/ RND

.

:

.		56 3/4	
	1/16		
:	:	:	
.8 /		↩️ FLAGS ENTER 8	
	/	1 6 ↩️ /c	
) . 1/16			
9 8 /			
(			
.D	56 3/4	5 6 . 3 . 4	
		➡️ STO D	
9 7/16	9 7/16▲	6 ÷	
.			
	9 7/16	➡️ RND	
.	56 5/8	6 x	
.	-0 1/8	RCL D -	
.8 /	-0 1/8	↩️ FLAGS 2 (2CF) 8	
/	-0.1250	➡️ FDISP	
.			

.

/

.

.

()

.

/

6

: HP 35s

.()
 .(7)
 .(8) .

:

$$V = .25 \pi d^2 l$$

. l d

16

2 5 ENTER π × 2 5 x² × 1 6 ×

.(78,5398) (2 1/2) 2,5

. - " " HP 35s

: /

:	:	:
/	EQN □ LIST □ TOP	[EQN]
.EQN	.2	
		[RCL]
		[RCL]
	A..Z	
.		
.V /	[RCL] [V]	V=. [V] [↩] [=]
		V= 0.25. [.] [2] [5]
	" - "	
.	[X]	V=0.25×π×- [X] [↩] [π] [X]
.^ /	[y ^x]	V=0.25×π×D^2- [RCL] [D] [y ^x] [2]
		V=0.25×π×D^2×L- [X] [RCL] [L]
		V=0.25×π×D^2×L [ENTER]
.		
	CK=49CR	[↩] [SHOW]
	LN=14	
.		
	" "	) .
		.(
		:(V)
:	:	:
/	D?	[ENTER]
	value	
D /		
. D		
.	2 1/2	[2] [.] [1] [.] [2]
	D?	2 1/2-
.L /	L?	[R/S]
. L	value	
V L	V=	[1] [6] [R/S]
.V	78.5398	

.2

. / . . " ") XEQ .(. " = " " _ " " = " .(7)) .(8 ) .() (/ . . /	EQN ENTER XEQ SOLVE ↩ / ← < or > ↶ < or ↷ > ^ or v ↶ ^ or ↷ v ↩ SHOW ↩ UNDO C

.13

-

8 2 / /
 ALL / . 16
 . 12



. .

" . " G " HP 35s
 .

:

. " ÷ " " + "



. " LN " " COS"



- /

/

0

,



/
 /
 (" / ") . ()
 : :

$$r = 2 \times c \times (t - a) + 25$$
 : :

$$V = 0.25 \times \pi \times D^2 \times L$$
 EQN
 .R

$$R = _$$
 RCL R $\leftarrow$ =

$$R = 2 _$$
 2

$$R = 2 \times C \times _$$
 $\times$ RCL C $\times$

$$R = 2 \times C \times (_)$$
 ()
 /
 /

$$= 2 \times C \times (T - A) + 25 _$$
 RCL T $-$ RCL A

$$R = 2 \times C \times (T - A) + 25$$
 $\rightarrow$ + 2 5
 ENTER
 CK=9E5F
 LN=14
 / C

(/)

3*3 lin. Solve 2*2 lin. solve

. EQN

/

EQN

.1

EQN LIST TOP ■

$$\cdot \left(\quad \right) \quad \blacksquare$$

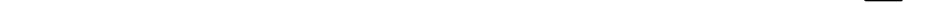
⏮ ⏭ .2

```
"      "      EQNLIST TOP      "      "
```

□
□

14 . .1

14






$$/ \quad \leftarrow \quad \rightarrow \quad . \quad /$$

2 .3

□

□

/ :

□
□

□
□

□

□

$$R = 2 \times C \times (T - A) + 25 \quad \text{EQN}$$
$$R = 2 \times C \times (T - A) + 25$$
$$= 2 \times C \times (T - A) + 25$$

/

	/	
.	/	
.	/	
. 3*3 lin. Solve 2*2 lin. solve	/	
. 3*3 lin. Solve	/	
	:	
.	> <	.1
.	←	.2
ENTER	←	
.		
.	(C) ENTER	.3
	:	
>		.1
") .	<	
	.("	.2
	(C) ENTER	.3
	:	
) /		.1
.	(CLEAR DISPLAY MODE	
← x?y L.R.)		.2
(← CONST ← MEM R↓ ← LOGIC → BASE → SUMS → S.σ		
.		
/	→ x?0 FLAGS x?y	.3

2

CLR

3 (3EQN)

EQN /

EQN? Y N

25

R=2xCx(T-R)+25

=2xCx(T-R)+25

.25

R=2xCx(T-R)

C

HP 35s

" = "

$x^2 + y^2 = r^2$

" = "

$A = 0.5 \times b \times h$

$x^3 + 1$

" = "

X
ENTER
- /
.X XEQ
ENTER :
20 63
:
:
:
 $V = 0.25 \times \pi \times D^2 \times L$ EQN
(^ as required)
D?
2.5 ENTER
.V
.5 2 D
L D L? 3 5 R/S
.16 16
L
V V V V= 2 0 x 1 0 0
19,242,255.0033 0 ENTER
R/S
19.2423 ÷ 1 E 6
ENTER
.(V)
XEQ
.X

XEQ

:

. 5 35

:

:

:

V=0,25xπxD^2xL [EQN]

V?
19,242,255.0033 [XEQ]

.D . V D?
35 [R/S]

.L . D L?
20,000 [3] [5] [.] [5] [R/S]

/ L -
-553,705.7051 [R/S]

. -0.5537 [÷] [1] [E] [6] [ENTER]

-(D) (V)

/

.X?2.5000

(J) (I)

.(14) .

. [R/S]

$(X+1)$	Parentheses	. /	1
$\text{SIN}(X+1)$	Functions	. /	2
X^3	Power (y^x)	. /	3
$-A$	Unary Minus ($\frac{+}{-}$)	.	4
$X \times Y, A \div B$	Multiply and Divide	.	5
$P+Q, A-B$	Add and Subtract	.	6
$B=C$	Equality	.	7

. /

:

$a \times (b^3) = c$ $(a \times b)^3 = c$ $a + (b/c) = 12$ $(a + b) / c = 12$ $[\%CHG((t + 12), (a - 6))]^2$	$A \times B^3 = C$ $(A \times B)^3 = C$ $A + B \div C = 12$ $(A + B) \div C = 12$ $\%CHG(T + 12, A - 6)^2$

" G

.

/

"

SQRT	SQ	ALOG	EXP	LOG	LN
!	ABS	RND	FP	IP	INV
		RMDR	IDIV	INTG	SGN
ATAN	ACOS	ASIN	TAN	COS	SIN
ATANH	ACOSH	ASINH	TANH	COSH	SINH
XROOT	%CHG	→HMS	HMS→	→RAD	→DEG
nPr	nCr	→KM	→MILE	→GAL	→L
→IN	→CM	→°F	→°C	→LB	→KG
		π	RAND	ARG	SEED
	$\wedge$	$\div$	$\times$	$-$	$+$
$\bar{y}$	$\bar{X}$	σy	σx	sy	sx
b	m	r	$\hat{y}$	$\hat{X}$	$\bar{X} w$
Σxy	Σy^2	Σx^2	Σy	Σx	n

/

.

. nPr nCr RMDR IDIV XROOT %CHG

.

.RPN /

XROOT



.XROOT(3,-8)

-8[ENTER] 3 $\sqrt[3]{x}$

RPN

Y X

.nCr(28,4)

28[ENTER] 4 $\leftarrow$ nCr



.

: /

%CHG(-X,-2)

%CHG(X,(-Y))

:

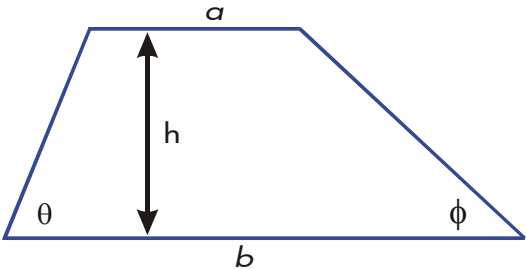
	RPN
SQ	x^2
SQRT	$\sqrt{x}$
EXP	e^x
ALOG	10^x
INV	$1/x$
XROOT	$\sqrt[x]{y}$
^	y^x
IDIV	INT÷

:

.

:

$a + b + h \left(\frac{1}{\sin \theta} + \frac{1}{\sin \phi} \right) =$



:HP 35s

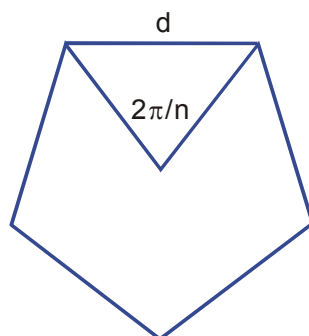
/

$$P=A+B+H\times(1\div\text{SIN}(T)+1\div\text{SIN}(F))$$

$$\text{INV}\left(\frac{\text{INV}(\text{SIN}(T))}{1\div\text{SIN}(T)}\right)+\text{INV}\left(\frac{\text{INV}(\text{SIN}(F))}{1\div\text{SIN}(F)}\right)$$

$$P=R+B+H\times(\text{INV}(\text{SIN}(T))+\text{INV}(\text{SIN}(F)))$$

$$\frac{1}{4}n d^2 \frac{\cos(\pi/n)}{\sin(\pi/n)} =$$



$$R=0.25\times N\times D^2\times\cos(\pi\div N)\div\sin(\pi\div N)$$

EQN RCL A $\leftarrow$ = $\cdot$ 2 5 $\times$ RCL N $\times$ RCL D y^x 2 $\times$
 COS $\leftarrow$ π $\div$ RCL N $>$ $\div$ SIN $\leftarrow$ π $\div$ RCL N ENTER

()

SYNTAX ERROR

" / "

.(

" " HP 35s

.13

.()

/

$\leftarrow$ SHOW

/

SHOW

:

.

/

:

:

:

$V=0.25 \times \pi \times D^2 \times L$

EQN
 ($\wedge$ as required)

CK=49CA
 LN=14

$\leftarrow$ SHOW (hold)

$$V = 0.25 \times \pi \times D^2 \times L \quad (\text{release})$$

/

C

7

ENTER

6

SOLVE

$$x^2 - 3y = 10$$

x

.x

SOLVE

y

:

"

"

.y

SOLVE

$$\text{Markup} \times \text{Cost} = \text{Price}$$

/

=

x

SOLVE

x

/

:

(

/

)

/

EQN

.1

."

"

6

SOLVE X

SOLVE

.2

.x

:

/

.3

R/S

") R/S " .(6 " . R/S C

Z Y X .() D

NO - / " " " " / " .ROOT FOUND .D " SOLVE

/

" SOLVE

$$d = v_0 t + \frac{1}{2} g t^2$$

g t v0 d

: /

```

:
:
:
/
CLEAR 3 (3ALL)
< (Y) ENTER
/
3*3 lin. solve EQN
EQN LIST TOP
.
RCL D < = RCL
D=VxT+ V x RCL T +
←=VxT+0.5xGxT^2 5 x RCL G x
RCL T y^x 2
D=VxT+0.5xGxT^2 ENTER
.
.
CK=FB3C SHOW
LN=15

```

(32.2 ft/s² 9.8 m/s²) () g

```

/
5
:D
:
:
SOLVE_ SOLVE
.
D V? D
.V value
V T? 0 R/S
.T value
T 5 G? 5 R/S
.G value
G 9,8 SOLVING 9 8 R/S
.D D= 122.5000

```

500 :

:	:	:
	$D = V \times T + 0.5 \times G \times T^2$	[EQN]
.		
T	D?	[] [SOLVE] [T]
	122.5	
	.D	
D	500	V?
	.V	0
		[5] [0] [0] [R/S]
	.G	G?
	.V	9.8
		[R/S]
G	9.8	SOLVING
.T		T=
		10.1015
		[R/S]

:

(moles)

$$P \times V = N \times R \times T$$

R	moles	N (	)	(N/m2	)	P
K=°C + :Kelvins	)	T	(8.314 J/mole-K	)	0.0821 liter-atm/mole-K	

(273.1

:

:	:	:
/	Px_	[EQN] [RCL] [P] [x]
.		
		[RCL] [V] [] [=]
		[RCL] [N] [x]
	PxV=NxRxT_	[RCL] [R] [x] [RCL] [T]
	PxV=NxRxT	[ENTER]
.		
	CK=EDC8	[] [SHOW]
	LN=9	

24

moles 0,005

/

:P

:			:	:
.V	P	V?	value	$\rightarrow$ SOLVE $\rightarrow$ P
.N	V 2	N?	value	2 R/S
	N 0,005	R?	value	$\cdot$ 0 0 5 R/S
	.R			
	R 0,0821	T?	value	$\cdot$ 0 8 2 1 R/S
	.T			
(Kelvins	) T	T?	297.1000	2 4 + 2 7 3 $\cdot$
	T 297,1	SOLVING		1 ENTER
	P	P=	0.0610	R/S
.				
18	atmospheres 0,05			
	.(			
:	:	PxV=NxRxT		EQN
N	P?	0.0610		$\rightarrow$ SOLVE $\rightarrow$ N
	.P			
P	0,05	V?	2.0000	$\cdot$ 0 5 R/S
	.V			
V	5	R?	0.0821	5 R/S
	.R			
R		T?	297.1000	R/S
.T				
	) T	T?	291.1000	1 8 ENTER 2 7 3
	.(Kelvins			$\cdot$ 1 +
				R/S
T	291,1	SOLVING		
.N		N=	0.0105	
/		0.2929		2 8 x
	.N x 28			

✓

✓

✓

.0586

RCL V ÷

() /

"3*3 lin. "2*2 lin. solve" (Ax+By=C, Dx+Ey=F) :

/ ENTER XEQ

.Solve"(Ax+By+Cz=D, Ex+Fy+Gz=H, lx+Jy+Kz=L)

A) 12 2*2 (F A) 6 → SOLVE

z y x 2*2 y,x 3*3 (L

. z y x .3*3

$$\left. \begin{array}{l} x+2y=5 \\ 3x+4y=11 \end{array} \right\} :$$

:
/
.
3*3 lin. solve EQN
EQN LIST TOP

EQN LIST TOP
2*2 lin. solve

.A A? value → SOLVE

A 1 B? value 1 R/S
.B

B 2 C? value 2 R/S
.C

C 5 D? value 5 R/S
.D

D 3 E? value 3 R/S
.E

E 4 F? value 4 R/S
.F

F 11 X= 1 1 R/S
.y x 1.0000

. y y=   
 2.0000

SOLVE

/

SOLVE

.()

SOLVE

SOLVE

SOLVE

" = " - 

SOLVE

. $P \times V - (N \times R \times T)$

." -"

/

.

.(" SOLVE ") .

NO ROOT FND

SOLVE

.SOLVE

D

/

SOLVE

:

() (/ ) X ■

.(() Y ■ ✓

.X

. Y X / D () Z ■ ✓

) / NO ROOT FND
 .(() /   - - X
 Z . Y X
 .
 Z Y X ■
 . X
 Z Y X ■
 .
 SOLVE /
 . "INTERRUPTED"  
  .
 .
 SOLVE
 :
 . ■
 () X ■
 .
).
 .(
 :

/

$$d = v_0 t + \frac{1}{2} g t^2$$

.t

T
() T .D T
.T

$$y = t + \log x$$

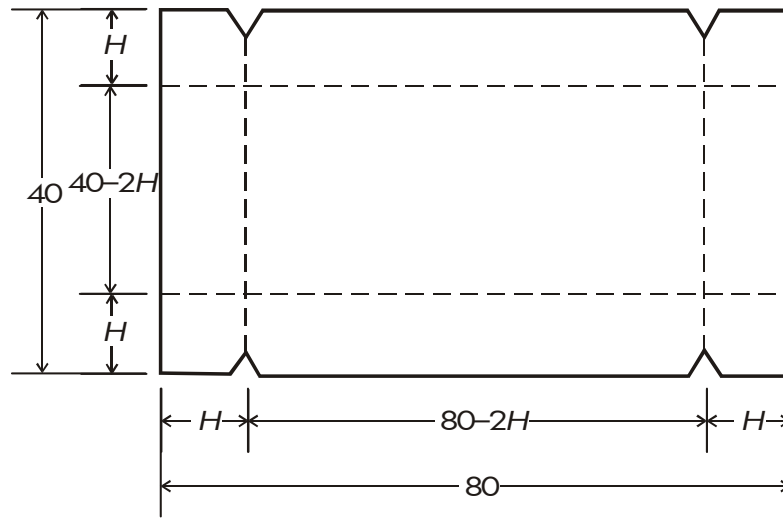
(NO ROOT FND) $x \leq 0$

:

/ 80 40

) 7500

/ (



$$V = (40 - 2H)(80 - 2H)H$$

$$V = (80 - 2H) \times (40 - 2H) \times H$$

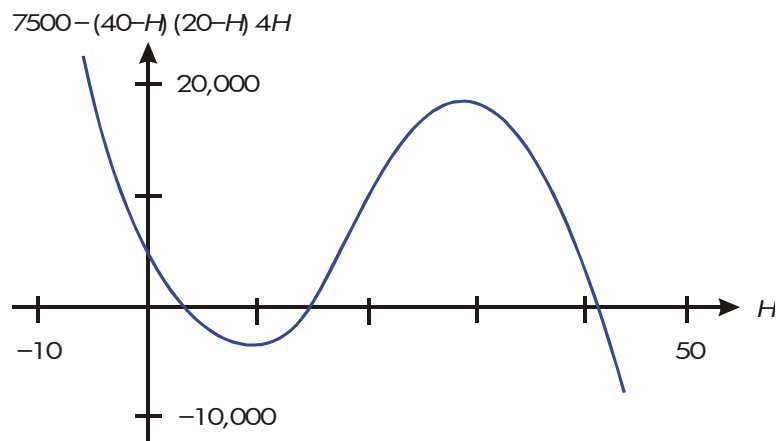
$$V = (40 - H) \times (20 - H) \times 4 \times H$$

:	:	:
/	V=	EQN
.		RCL V $\leftarrow$ =
	V=(40-H)	() 4 0 -
		RCL H >
	(40-H)×(20-H)	× () 2 0 -
		RCL H >
	H)×(20-H)×4×H	× 4 × RCL H
	V=(40-H)×(20-H	ENTER
	CK=49A4	$\leftarrow$ SHOW
	LN=19	

.	20	.	40
.	20 10	.	
:	:	:	
/		C	
.		1 0 STO H	
.	20	ENTER 2 0	
.		V=(40-H)×(20-H)	EQN
.			
.V	H	V?	SOLVE H
		value	
.V	7500	H=	7 5 0 0 R/S
.H		15.0000	
-		-	
	.(Z)		(Y)
			✓
:	:	:	
Y		15.0000	R↓
.			
.	/		
			✓
Z		0.0000	R↓
.			
(20)		15 × 10 × 50	
- 42,0256		40 30	

- 2,9774 10

$$y = 7500 - (40 - H)(20 - H) - 4H$$

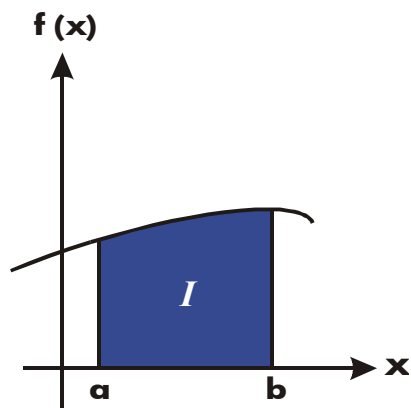


SOLVE

D

$\int_a^b f(x) dx$

$$I = \int_a^b f(x) dx$$



$f(x)$ I $f(x)$ $x=b$ $x=a$ x

$\int_a^b f(x) dx$ $\int_a^b f(x) dx$

(J FN)

:

")

.1

.

/

(6

"

.

ENTER

.2



^

)

EQN

:

.3

(v

← /

:

.4

MEMORY FULL

/

/

.B

"

R/S

C

2

" INTERRUPTED

SCI FIX

ALL

/

.Z T

Y

/

.ENG

"

"

:

.Y X

R↓ R↓



.2

3

1

.Bessel :

0 / Bessel

$$J_0(x) = \frac{1}{\pi} \int_0^\pi \cos(x \sin t) dt$$

.3 2 x Bessel

:

cos (x sin t)

:

:

:

/

CLEAR **3**
(3ALL) **(Y)** **ENTER**
EQN

3*3 lin. solve
 EQN LIST TOP

COS(X)

COS **RCL** **X**

COS(XxSIN(

X **SIN**

COS(XxSIN(T)

RCL **T**

COS(XxSIN(T))

> **>**

COS(XxSIN(T))

ENTER

CK=E1EC
 LN=13

SHOW

/

C

. x = 2 π t

:

:

:

. Radians

MODE **2** (2RAD)

)

3.1416

0 **ENTER** **π**

.(

COS(XxSIN(T))

EQN

∫ FN d_

∫ **FN**

. X

X?
 value

T

$$x = 2 \quad \text{INTEGRATING}$$

$$\int_0^{\pi} f(t) \quad \int =$$

$$0.7034$$

2 R/S

✓

$$J_0(2) \quad 0.2239$$

↩ π ÷

(0, π)

$J_0(3)$

.π

✓

:

:

:

3.1416

0 ENTER ↩ π

.()

COS(X×SIN(T))

EQN

∫ FN d_

↩ ∫

.X

X?

T

2.0000

x = 3 INTEGRATING

3 R/S

$$\int_0^{\pi} f(t) \quad \int =$$

$$-0.8170$$

✓

$$J_0(3) \quad -0.2601$$

↩ π ÷

:

✓

)

(

)

:

(

$$S_i(t) = \int_0^t \left(\frac{\sin x}{x} \right) dx$$

.Si (2)

$$\frac{\sin x}{x}$$
 DIVIDE BY 0) $x = 0$.(

:	:	:
/	3*3 lin. solve EQN LIST TOP	[EQN]
.	SIN(X)	[SIN] [RCL] [X]
.	SIN(X)	[>]
.	SIN(X)+X	[÷] [RCL] [X]
.	SIN(X)+X	[ENTER]
.	OK=0EE0 LN=8	[←] [SHOW]
/		[C]

$$\frac{(t=2)^2}{(X)^x}$$

:	:	:
.Radians		[MODE] [2] (2RAD)
.	$2_$	[0] [STO] [X] [ENTER]
.()		[2]
.	SIN(X)+X	[EQN]
.		
.Si(2)	INTEGRATING ∫ = 1.6054	[←] [∫] [X]

./

.

.

.

.E

(ALL ENG SCI FIX)
)

/

:

.(

.

/

.

.

(7 /)

/

.

I

$x \leftrightarrow y$

.Y

/

.

/

.

/

0.0002

1.6054 ± 0.0002

Si(2)

.() SCI 2

SCI 2

$$\frac{\quad}{1.61E0}$$




 (2SCI) 

T Z

.Y X

0.00E0
2.00E0
$$\sin(x) \div x$$

EQN

INTEGRATING

$$\int = 1.61E0$$

/ 1.61E-2

$$x \triangleleft y$$

/ .1.61±0.0161

$$\cdot (f(x))$$
 $Si(2)$

:	:	:
/	1.6079E-2	DISPLAY 2 (2SCI) 4
.		
T Z	0.0000E0 2.0000E0	
.Y X		
.	SIN(X)÷X	EQN
.	INTEGRATING	X
	∫ =	
/	1.6054E0	
1/100	1.6056E-4	X↔Y
/		
SCI 2		
.		
.FIX 4	0.0002	DISPLAY 1 (2SCI) 4
/	0.0002	MODE 1 (1DEG)
.		
/		
.		
/		
.		

HP 35s

E

9

.

HP 35s

	$x+yi$	$r\theta$
(sin, cos, tan)	(÷ × - +)	
.(	$z_2 z_1$	) . e^z $\ln z$ $z_1^{z_2}$ $1/z$ $-z$
	. ALG	/
		$x+yi$
	:	
	$x+yi$	:
	.	.1
	. i	.2
	.	.3
	$x+yi$	:
	.	.1
	. $+$	.2
	.	.3
	. i	.4
	$r\theta$	:
	.r	.1
	. θ	.2
	. θ	.3
	.	
	RPN	/

:	:
$\boxed{+/-}$	$-z$
$\boxed{1/x}$	$1/z \quad /$
$\boxed{\ln}$	$\ln z \quad /$
$\boxed{e^x}$	$e^z \quad /$
$\boxed{\sin}$	z
$\boxed{\cos}$	z
$\boxed{\tan}$	$z \quad /$
$\boxed{\text{ABS}}$	$\text{ABS}(z)$
$\boxed{\text{ARG}}$	$\text{ARG}(z)$

:



. z_1 .1

. z_2 .2

. .3

$z_2 \ z_1$

:	:	
$\boxed{+}$	Addition, $z_1 + z_2$	/
$\boxed{-}$	Subtraction, $z_1 - z_2$	
$\boxed{\times}$	Multiplication, $z_1 \times z_2$	
$\boxed{\div}$	Division, $z_1 \div z_2$	
$\boxed{y^x}$	Power function, $z_1^{z_2}$	

:

$$\frac{(2i)^3}{\dots}$$

$$\frac{9.1545i - 4.1689}{\dots}$$

$$z_1 \div (z_2 + z_3),$$

$$z_1 = 23i^{13}, z_2 = -2i^1 \quad z_3 = 4i^{-3}$$

$$\frac{2i^{-2} (z_2 + z_3)}{2.5i^9}$$

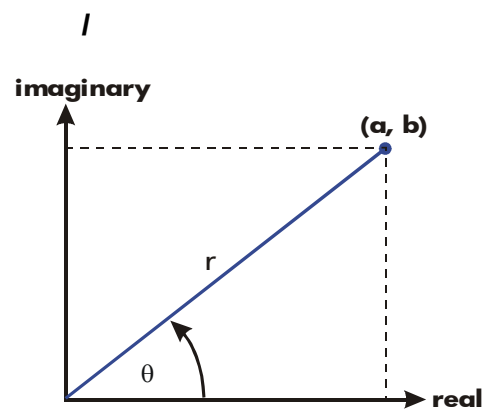
$$\frac{(4i^{-2/5}) \times (3i^{-2/3})}{\dots}$$

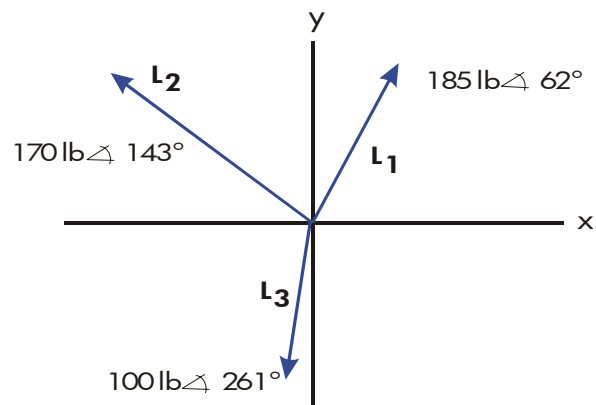
$$\frac{4i^{2/5}}{3i^{2/3}}$$

$$11.7333i - 3.8667$$

$$z = (1i^1) e^{z^{-2}}$$

:	:	:
1i1	1.0000i1.0000	1 i 1 ENTER
	1.0000i1.0000	
0i-5	Z-2 0.0000i-5.0000	2 +/- y^x
	0.8776i-0.4794	e^x
0.8776 i- 0.4794.		





:	:	:
.	/	MODE 1 (1DEG)
.	/	← DISPLAY . 0
.	.	(10r8a)
L ₁	185.0000062.0000	1 8 5 → 0
	185.0000062.0000	6 2 ENTER
L ₂	170.00000143.00...	1 7 0 → 0
	170.00000143.000→	1 4 3 ENTER
L ₂ + L ₃	L ₃ 185.0000062.0000	1 0 0 → 0
	151.45290178.660→	2 6 1 +
L ₁ + L ₂ + L ₃	178.93720111.148→	+ ←
	←9	→ >
.	.	.
/	/	.
		DISPLAY

$$1i1+3\theta10+5\theta30 \quad /$$

:	:	:
/		MODE 1 (1DEG)
.		← DISPLAY . 0
/		(10rθa)
.		1 i 1 ENTER
1i1	1.4142045.0000	
	1.4142045.0000	
3θ10	3.0000010.0000	3 → 0 1 0
	3.0000010.0000	ENTER
5θ30	1.4142045.0000	5 → 0 3 0
3θ10	7.8861022.5241	+
1i1	9.2088025.8898	+
9.2088θ25.8898		

.	.
.r θ a xiy	
/	/
. ALG /	/
.	

: 1i2+3010+5030 .

	(ALG) :
.	F001 LBL F
	F002 1i2+3010+5030
	F003 RTN

. INPUT /
. /

/

■

/

/

/

■

□
□



.1

•

.2

.3-D 2-D

.3

.3-D

.4

HP 35s

□
□

"INVALID DATA"



.1

■

.2

•

•

.3

$$[1.5, -2.2] + [-1.5, 2.2]$$



:	:	:
		MODE 5 (5RPN)
) RPN		
.(		
[1.5, -2.2]	[1.5000, -2.2000]	1 0 5
	[1.5000, -2.2000]	2 0
		2 ENTER
[-1.5, 2.2]	[1.5000, -2.2000]	1 0
	[-1.5, 2.2]	5 2 0 2
	0.0000	+
	[0.0000, 0.0000]	

$$[-3.4, 4.5] - [2.3, 1.4]$$

:	:	:
		MODE 4 (4RLG)
.ALG		
[-3.4, 4.5]	[-3.4, 4.5]	3 0 4
		4 0 5 >
[2.3, 1.4]	← [-3.4, 4.5] - [2.3, 1.4]	- 2 0 3
		1 0 4
	[-3.4, 4.5] - [2.3, 1.4]	ENTER
	[-5.7000, 3.1000]	



.	.	.1
.	.	.2
.	.	.3
÷	×	

$$[3, 4] \times 5$$

DOT
"INVALID DATA"

[A, B], [C, D] :2D

$$[A, B] \cdot [C, D] = A \times C + B \times D$$

[A, B, X], [C, D, Y] :3D

$$[A, B, X] \cdot [C, D, Y] = A \times C + B \times D + X \times Y$$

.1

.2

.3

.4

." " " " x :

.17

[3,4] [1,2]

: :

.ALG MODE 4 (4ALG)

[1,2] [1,2]_ [1,2]x[3,4] 4

.

11.0000 ENTER

.11

[2,2] [9,5]

: :

.RPN MODE 5 (5RPN)

[9,5] [9.0000,5.0000] [9.0000,5.0000] ENTER

[2,2] [9.0000,5.0000] [2,2]

x 28.0000 x

.28



B A

$$\cos \theta = \frac{A \cdot B}{|A||B|} \Rightarrow \theta = \text{ACOS}(A \cdot B / (|A||B|))$$

A=[1,0],B=[0,1] :

: : :

.ALG MODE 4 (4RLG)

. MODE 1 (1DEG)

. ACOS()

A [1,0] ACOS([1,0])

B [0,1] ACOS([1,0]×[0,1])

B A

A [1,0] ←,1]÷ABS([1,0])→

B [0,1] ←1,0]÷ABS([0,1])→

.90 ACOS([1,0]×[0,1])

90.0000

A=[3,4],B=[0,5] :



: : :

.RPN MODE 5 (5RPN)

. MODE 1 (1DEG)

. 90

. 20.0000

[3,4] 20.0000

[0,5] 5.0000

. 20.0000

. 25.0000

. 90

. 0.8000

. 90

36.8699 36.8699

.

.

solver

.

.

1-D

.

: [5, 6] + 2 x [7, 8] x [9, 10]

: :

G0001 LBL□G

.

[5,6] G0002 [5,6] + 2 x [7,8] x [9,10]

G0003 RTN

.

.

/

.

ALG

RPN

.  

ALG

.  



/  /

.



. 



J I

. (J) (I)

RPN [C, REGZ, (J)] /

.    ,   ENTER  ,  (J) ENTER



/

( **BASE**) BASE

/

( **LOGIC**) LOGIC

BASE

. / . / HEX . / . RPN       .F A / F E D C B A  ALG .F A OCT . / . BIN . / . 12 ")     .(" "h"	DEC HEX OCT BIN d h
. ."o" . ."b"	o b

/ :
 . /
 . 125.99₁₀
 : : :
 7Dh [1][2][5][] [BASE] [2] (2HEX)
 .16
 .8 175o [] [BASE] [3] (3OCT)
 .2 1111101b [] [BASE] [4] (4BIN)
 125.0000 [] [BASE] [1] (1DEC)
 / :
 () .
 .
) 14 . 24FF₁₆
 .(
 : : :
 [1/x] 24FFh [] [BASE] [2] (2HEX) ✓
 . " F " [2][4][1/x][1/x][] [BASE] [6] (6h)
 . [] [BASE] [4] (4BIN)
 → 1001001111111111 →
 .
 ←b [] []
 1001001111111111_b
 14 1001001111111111 → [] []
 .
 / 9.471.0000 [] [BASE] [1] (1DEC)

/ h/d/o/b n- / BASE
 . / / 16/10/8/2 /
 /
 :
 :ALG /
 . / / .1
 (1) / .2
 . 2
 / ENTER .3
 .2 16/10/8/2 / h/d/o/b /
 . > < .4
 :RPN /
 . / ENTER , 2
 h/d/o/b 2 1 /
 .16/8/2
 . ↵ > ↵ < , 2

LOGIC

[illegible]

```

"AND", "OR", "XOR", "NOT", "NAND", "NOR"
"INVALID DATA"

```

16 ,8 ,2 /

$\div$ $\times$ $-$ $+$
 $\Sigma+$ $1/x$ y^x $\ln$ e^x $\sqrt{x}$ HEX $/$ $/$
 $/$ $/$

$$: \quad / \quad 16,8,2 \quad /$$

, X

.X

OVERFLOW

$$12F_{16} + E9A_{16} = ?$$

16

HEX

BASE 2 (2HEX)

FC9h

1 2 /x BASE 6
(6h) ENTER y^x 9 SIN
BASE 6 (6h) +

$$7760_8 - 4326_8 = ?$$

OCT

,8

7711o

BASE 3 (3OCT)

3432o

7 7 6 0 BASE
7 (7o) ENTER 4 3 2
6 BASE 7 (7o) -

$$100_8 \div 5_8 = ?$$

14o

1 0 0 BASE 7
(7o) ENTER 5 BASE
7 (7o) ÷

$$5A0_{16} + 1001100_2 = ?$$

HEX

,16

5A0h

BASE 2 (2HEX) 5
SIN 0 BASE 6
(6h) ENTER

,2

BIN

1001100b

BASE 4 (4BIN)
1 0 0 1 1 0 0
8 (8b)

 BASE **2** (2HEX)

 **BASE** **1** (1DEC)

1

— /

,

/

.(9

$$: \quad 125_{10}$$

1111101b

: 36

00000000000000000000000000000000001111101b

()

$$\left(\begin{array}{c} \vdots \\ \vdots \\ \vdots \end{array} \right) \quad . \quad (1)$$

.() 0

■

■

—

■ ■

222h 5 4 6 ↗ BASE
2 (2HEX)

.()

FFFFFDDh

+/- 5 4 6

ENTER

1111111111111111 ➡  BASE 4 (4BIN)

/

,

/

.

.

12

HP 35s

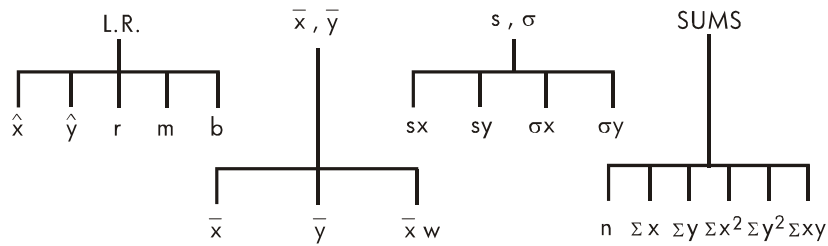
:() /

. /

.($\hat{y}$ $\hat{x}$) /

(y x)

. Σxy Σy^2 Σx^2 Σy Σx n :



/

/ ()

/ .(Σ^-) Σ^+

SUMS

) .SUMS

(-32 -27)

(n Σx Σy Σx^2 Σy^2 Σxy)

(CLEAR 4 (4 Σ)



/

. / CLEAR 4 (4Σ) .1
 x .2
 . n .3

/ .y Y
 - X y
 . y x

LASTx

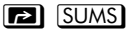
/

ENTER () ✓
 ()

. / CLEAR 4 (4Σ) .1
 . ENTER y .2
 x .3
 . n .4
 . n .y x .5
 LASTx x

/

y x

$r = \frac{\hat{y} - \hat{x}}{\sqrt{\frac{\sum (y_i - \bar{y})^2}{n-1} + \frac{\sum (x_i - \bar{x})^2}{n-1}}}$		L.R.
$\bar{y} = \frac{\sum y}{n}, \bar{x} = \frac{\sum x}{n}$		$\bar{y}, \bar{x}$
$s_y = \sqrt{\frac{\sum (y_i - \bar{y})^2}{n-1}}, s_x = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n-1}}$		s, σ
$\sum x^2, \sum y^2, \sum xy$		SUMS

/

$$\bar{x} = \frac{\sum x}{n}, \bar{y} = \frac{\sum y}{n}$$

$$s_x = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n-1}}, s_y = \sqrt{\frac{\sum (y_i - \bar{y})^2}{n-1}}$$

$$\sum x^2, \sum y^2, \sum xy$$

$$\cdot (\quad) \quad / \quad :$$

■

, ,

,

$$:(\quad)$$

15.5
12.5

9.25
12.0

10.0
8.5

$$\cdot(x) \quad /$$

□ □

□ □

□ □

/

 (4Σ)

1.0000

1 5 · 5 Σ^+

6.0000

9	•	2	5	$\Sigma+$	1	0	
$\Sigma+$	1	2	•	5	$\Sigma+$	1	
2	$\Sigma+$	8	•	5	$\Sigma+$		

$$\overline{XW} \quad \overline{Y} \quad \overline{X}$$

$$11.2917$$
$$) \overline{x} \leftarrow \boxed{\leftarrow} \boxed{\overline{x}, \overline{y}} ($$

.() / :

$$\vdots$$

•

\$4.10	\$4.70	\$4.60	\$4.25 (x)
1000	900	800	250 (y)

$$, (\quad) , y \quad . \quad (\quad)$$

• / ,X

□

□
□

□
□

/

 **CLEAR** **4** (4Σ)

n ,

900.0000
3.0000

2 5 0 ENTER 4 .
2 5 Σ+
8 0 0 ENTER 4 .
6 Σ+
9 0 0 ENTER 4 .
7 Σ+

1,000.0000 1 0 0 0 ENTER 4

$\frac{1}{n-1} \sum_{i=1}^n \frac{(x_i - \bar{x})^2}{(y_i - \bar{y})^2}$

180 174 ,173 ,170

4.0000
 3.6315

() L.R /
 .y,x

STAT ERROR

L.R



(/) ...

$y \quad x (\quad)$	$\hat{x}$
.	
$x \quad y (\quad)$	$\hat{y}$
.	
$(y - x)$	r
+1 -1	
.	
.	m
$y \quad /$	b

$(x -) y$

y

$(y -) x$

$\leftarrow$ L.R. $\rightarrow$ ($\hat{y}$) $\leftarrow$ L.R. ($\hat{x}$)

r

$\leftarrow$ L.R.

,

$b \quad m$

.

,

.

$y \quad / \quad / \quad , \quad :$

80.00 60.00 40.00 20.00 0.00 ,X
()

7.78 7.21 6.61 5.78 4.63 ,Y
()

:

:

:

/

$\rightarrow$ CLEAR 4 (4Σ)

.

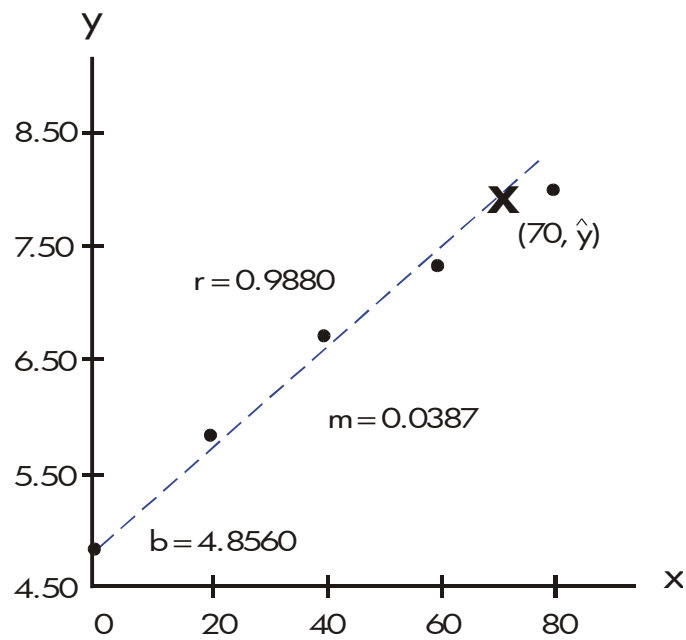
n ,

7.2100
4.0000

4 . 6 3 ENTER 0
Σ+
5 . 7 8 ENTER 2
0 Σ+
6 . 6 1 ENTER 4
0 Σ+
7 . 2 1 ENTER 6
0 Σ+

7.7800 7 8 ENTER 8
 5.0000 0 Σ+
 r m b $\hat{y}$ $\hat{x}$ L.R. > > (r)
 0.9880

/ r m b $\hat{y}$ $\hat{x}$ >
 0.0387
 .y r m b $\hat{y}$ $\hat{x}$ >
 4.8560



70

: : :
 . x 7.7800 C 7 0
 70_
 . r m b 0 x) 9 L.R. > (
 7.5615



/ /
 / ,
 :
 , /
 /
 x .(/)
 / $\hat{y}$ $\hat{x}$ $\bar{x}$, /
 , 7777001 7777000 7776999 x , .b
 $\hat{x}$ $\bar{x}$ 7777000 1 0 -1
 .7777000 x $\hat{y}$.7777000 $\times m$ b
 , y x
 /

◀ Σ-

/

↶ SUMS

(n) ■

. x

> (Σx) ■

. y

> > (Σy) ■

> > > > > (Σxy)

> > > > (Σy²) > > > (Σx²) ■

y x

▼ ▲

↶ MEM 1 (1VAR) ENTER

/ :

(3,4) (1,2)

Σ+

/

↶ CLEAR 4 (4Σ)

.(1,2)

2.0000
1.0000

2 ENTER 1 Σ+



.(3,4)

4.0000
2.0000

4 ENTER 3 Σ+



VAR	/	↑	n=	
	.n	↓	2.0000	MEM 1 (1VAR)
Σxy		↑	$\Sigma xy =$	
		↓	14.0000	
Σy^2		↑	$\Sigma y^2 =$	
		↓	20.0000	
Σx^2		↑	$\Sigma x^2 =$	
		↓	10.0000	
Σy		↑	$\Sigma y =$	
		↓	6.0000	
Σx		↑	$\Sigma x =$	
		↓	4.0000	
n		↑	n=	
		↓	2.0000	
VAR	/		4.0000	
			2.0000	

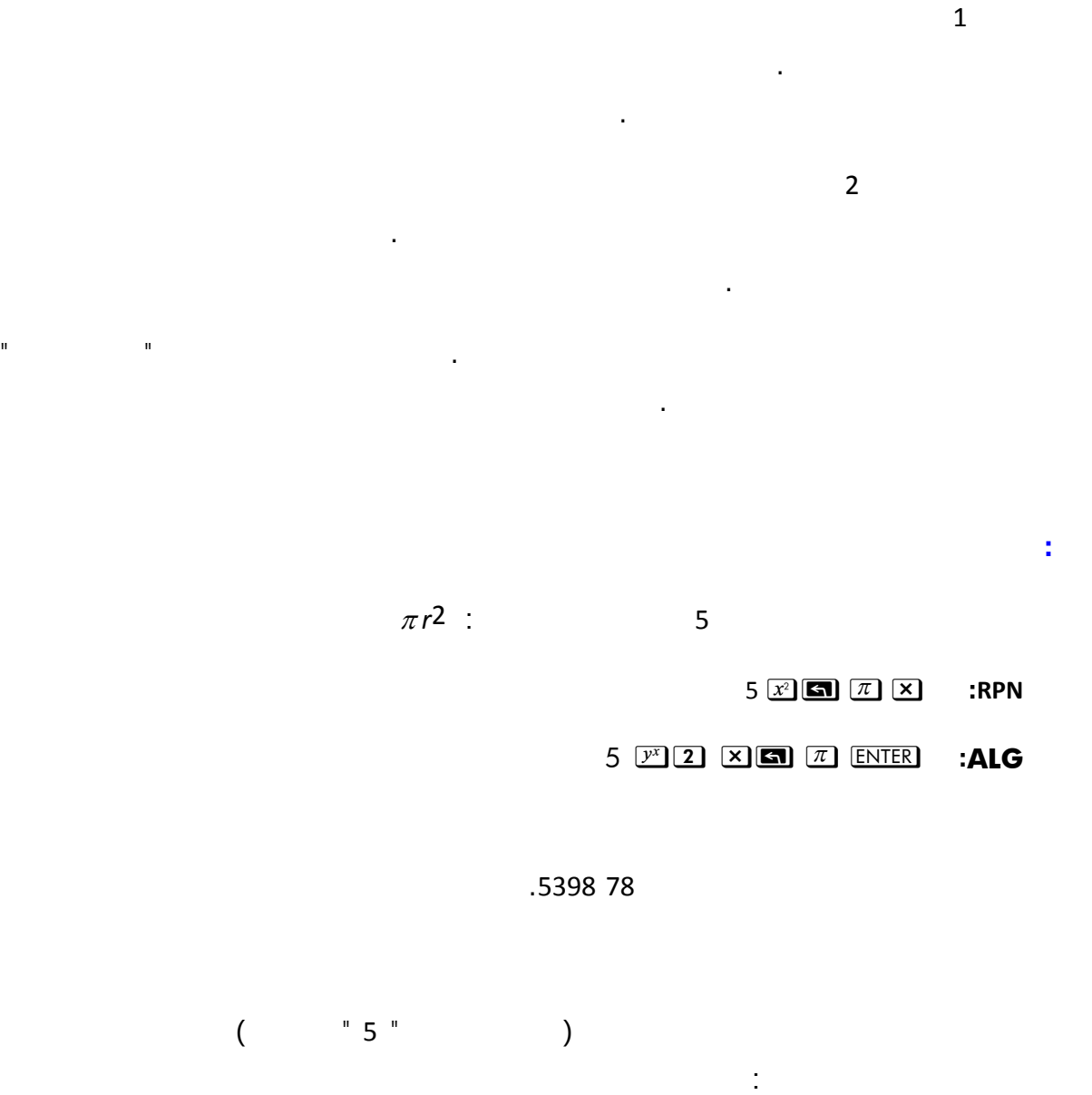
/ . HP 35s /

. ,

.	-27	n
. x	-28	Σx
. y	-29	Σy
. x	-30	Σx^2
. y	-31	Σy^2

.	$y - x$	-32	Σxy
---	---------	-----	-------------

(-32 -27)
 , .((J) STO (I)) J /
 / - () (J) (VIEW) (I)
 / " . SUMS .
 . 14 " /



	ALG	RPN
	0001 SQ(X)×π	0001 ×2 0002 π 0003 ×
() X		
.X		.
:		RPN
:		
:		
	:(RPN)	
.	/	
PRGM		
.(		
. PRGM TOP	PRGM TOP	GTO . .
. (Radius)²	0001 ×2	x²
. πx²	0002 π 0003 ×	π ×
		PRGM
.		
:5		
:		
:		
	:(RPN)	
.		GTO . .
!	78.5398	5 R/S
:		ALG

```

:
:
:(ALG )
. /
(CLEAR) 3
(3ALL) (Y) ENTER
PRGM
PRGM )
.(
PRGM TOP
GTO . .
. PRGM TOP
. (Radius)2 0001 SQ(X)×π
x² RCL X > X
π
PRGM
.
:5
:
:
:(ALG )
GTO . .
.
.X 5 5X 5.0000
5 STO X ENTER
! 78.9358 R/S

```

/

RPN
 ALG
 . ALG
 RPN

(RTN LBL)

/

.(R005 RTN)

(R001 LBL A)

. / A

/

. / ()

: /

  letter-key (/ -)

/ .Z A /

) / .(3)

. / (DUPLICAT.LBL

. / (/)

. /

. 999

: .

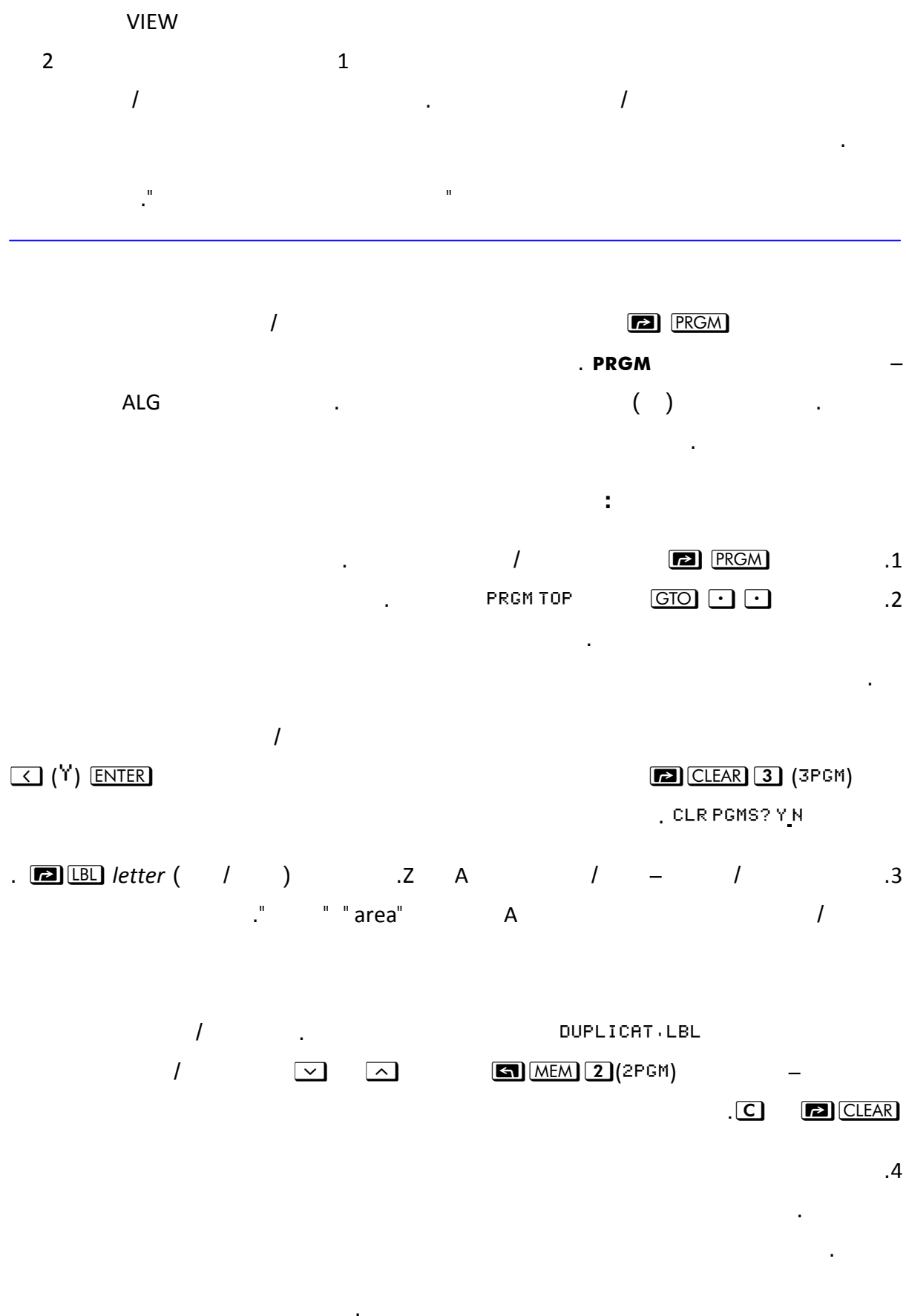
 

PRGM TOP

RTN

ALG RPN

:



PRGM TOP

.5

 RTN

 PRGM) 

.6

/

.( SHOW) .SCI ALL

:

.EQN

/



.1

6

.2



). .



.3

.(

 SHOW



 >

 <

/

/

:

/



 / 



/

/



/

.  CLEAR 1 (1x) X

/

XEQ GTO

:

A001 LBL A
 A002 2+3
 A003 1+2
 A004 GTO A003

. "A003 GTO A002"

A004

←A002



.(**PRGM**)

.(" ") A

A /

.(**PRGM**)

(RPN)



PRGM TOP (3PGM) < (Y)

A001 LBL A

A002 x²
 A003 π
 A004 x
 A005 RTN

LBL A
 LN=15 (2PGM)

CK=DAF1
 LN=15



RPN

:	:	:
	(RPN	)
/	PRGM TOP	   
.		
E	E001 LBL E	  
.(equation		
)		
	E002 STO R	  
.R		
/		  
.		  
/	E003 $\pi \times R^2$	  
.		
	CK=7E5B	 
	LN=5	
.	E004 RTN	 
E	LBL E	  
/	LN=17	(2PGM)
.		
	CK=2073	 
.	LN=17	
.		 



)

.

C

.(

PRGM

(XEQ)

:

/

/

XEQ

.ENTER

/

XEQ

"XEQ A001"

.XEQAENTER

.A

/

/

XEQ

.XEQA005

B

PRGM

.(

/

)

R/S

.

/

:

2,5

5

E

A

.E

A

.π2

:

:

:

(RPN)

.A

RUNNING

78.5398

5XEQAENTER

.E

19.6350

2.5XEQE

ENTER

.

124.0251

2←π×

XEQAENTER

```

      Z      A      3      /      )
      .(      /
      :
      .(      )      /      INPUT      ■
      .(      STO      )      ■
      .      ■
      ) .(11      /      )      ■
      .(
      :
      ) .      VIEW      ■
      PSE      ) .      Y      X      -      ■
      ) (11      /      )      .(      Y      X      ■
      .(      "      "      ■
      .

```


/ INPUT
 ( INPUT Variable ()) INPUT
 : . /
 R?
 0.0000
 "R"
 / "?"
 0.0000
 .
 X (/) 
 .X .

: INPUT

RPN	ALG
A001 LBL A A002 INPUT R A003 $\times^2$ A004 π A005 $\times$ A006 RTN	A001 LBL A A002 INPUT R A003 $SQ(R) \times \pi$ A004 RTN

: INPUT

) . .1
 .(R

RCL variable (

INDEX

—

$$-2 - 1 - \lambda$$

0.0000

P/S

100

100

10

10

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11

2

2

INTRODUCTION

/ VIEW

(VIEW variable()) VIEW

R=
78.5398

/ .X

.X ENTER

14

X

/ (←) C

/ → CLEAR

R/S

.16

VIEW

.X

T

T016

T015

VIEWed

RCL

.RCL

VIEW

ENTER

) .

X

17 16

.(

/

.

X

VIEWed

. — /
 . EQN
 . ENTER / RCL
 . 10 /
 .(14 /) J
 . R/S — ()
 . → 14
 .    

) 7 () S (cylinder) C : .() H () R

$$S = 2\pi R^2 + 2\pi RH = 2\pi R (R + H)$$

□ □

16 - 13

:	:	:	(RPN)
			EQN  π $\times$
			RCL R y^x 2 $\times$
			RCL H ENTER
		C004 $\pi \times R^2 \times H$	
		CK=74FE	 SHOW
		LN=7	
.V		C005 STO V	STO V
			EQN 2 $\times$ 
			π $\times$ RCL R $\times$ ()
			RCL R + RCL H
		C006 $2 \times \pi \times R \times (R + \rightarrow$	ENTER
		CK=19B3	 SHOW
		LN=11	
		C007 STO S	STO S
10	/		 FLAGS 1 (1SF)
		C008 SF 10	$\rightarrow$ 0
			EQN RCL V
			RCL O RCL L
			 SPACE + 
			SPACE RCL A
			RCL R RCL E
			RCL A ENTER
		C009 VOL + ARE $\rightarrow$	
			 FLAGS 1 (2CF)
		C010 CF 10	$\rightarrow$ 0
		C011 VIEW V	 VIEW V
		C012 VIEW S	 VIEW S
		C013 RTN	 RTN
C	/	LBL C	 MEM 2
		LN=67	(2PGM)
		CK=97C3	 SHOW
		LN=67	
			C C

. 8 2,5

: :

(RPN)

C) R
.(R

R? XEQ C ENTER
value

2 1/2

H? 2 . 1 . 2
value R/S

.H .

VOL + AREA 8 R/S

V= R/S

157.0796

S= R/S

164.9336

.() VIEW

R/S

() PSE

VIEW

/

/ RND

/() 7

PSE PSE

- PSE

- PSE VIEW

(PSE STOP)

.STOP (/) **R/S** ■

X

RTN STOP . **R/S**

.

.() PSE **↩** **PSE** ■

PSE . - X

(10 /) VIEW

- /

. **R/S** **C**

. (/) **R/S** .

‘ **↩** **RTN** **GTO** **XEQ**

XEQ label line (/) **R/S**

.(number

.(F)

. **↩** **PRGM**

÷) .

. (

.

.

:

^ v .1

/

. (Undo) ← - .2

) .

.(

.

.3

.([] PRGM [C] .4

/

.1

.2

A005 A004

A004

A005

:

.1

.2

< >

" "

-

>

<

.3

← " "

← -

. (Undo ←)

	:	
 		.1
 ()		.2
.		.
	   	.3
.	ALG , 	.4
		.5

	/	
) /	 	
/ .(		PRGM
.		
	.PRGM TOP	
.		
:(		)
.	   	▪
.		
(" / ")		▪
. <td>  </td> <td>▪</td>	  	▪
.	  label ()nnn	▪

() /
GTO label line number ()
 . /

MEMORY FULL

" " " / " .
 .B

(MEM) /
 / /
 / **◀** **MEM** **2** (2PGM) .
 : . **^** **v**
 / ■
 .
 .(/ **R/S** أو **XEQ**) ■
 .(/ **▶** **PRGM**) ■
 .(/ **▶** **CLEAR**) ■
 .(**◀** **SHOW**) / ■
 .
 : /

67

/

/

( ) /  MEM **2** (2PGM)  .1
 CLEAR .2
 /  .3

:

/

.(PRGM)  PRGM .1
 /  CLEAR **3** (3PGM) .2
 .< (Y)  CLR PGMS? Y N .3
 PRGM .4
 / ( CLEAR **3** (3ALL))

) /

.(

:

/  MEM **2** (2PGM)  .1
 .2
 LN= CK=  SHOW .3

: (")
 : : :
 (RPN)
 C LBL C [↩] [MEM] [2]
 . 67 LN=67 (2PGM) [ENTER]
 . CK=97C3 [↩] [SHOW] (hold)
 LN=67
 .
 .
 17 16
 . /
 " " .



: HP 35s
 [↩] [CLEAR] [3] (3PGM) [GTO] [] []
 [↩] [CLEAR] [3] (3ALL) [GTO] [] label line number (/)
 [↩] [MEM] [↩] [SHOW]
 [↩] [PRGM] [EQN]
 [↩] [] [↩] [] [FDISP]
 [↩] [UNDO] [↩] [CLEAR] [6] (6CLVARx)



BASE

•  **BASE**

/

/

/

/ /

.()

/

DEC

■

HEX

OCT BIN

/

/

/

/

/

/

/

■

/

□ □

/

A

•
•
•
•

•

PRGM BIN

A009 BIN

A010 10b

PRGM

A009 BIN

AE10 10

" d "

" b "

•
•
•
•

—

/

.

$$Ax^4 + Bx^3 + Cx^2 + Dx + E$$

x

RPN

.

x

.

:

.(x = 7) 7

x

$$5x^4 + 2x^3$$

RPN

:	:	:	
		(RPN)	
			PRGM
		PRGM TOP	
		A001 LBL A	LBL
		A002 INPUT X	INPUT
5		A003 5	
		A004 RCL X	
		A005 4	
x ⁴		A006 y ^x	
5x ⁴		A007 x	
		A008 RCL X	
		A009 3	
x ³		A010 y ^x	
		A011 2	
2x ³		A012 x	
5x ⁴ + 2x ³		A013 +	
		A014 RTN	
A /		LBL A	MEM (2PGM)
. 47		LN=46	
		CK=EA18	SHOW
		LN=46	

(x = 7)

:	:	:	
		(RPN)	
.x /	X?		ENTER
	value		
	12.691.0000		

: $Ax^4 + Bx^3 + Cx^2 + Dx + E$

```
A001 LBL A
A002 INPUT A
A003 INPUT B
A004 INPUT C
A005 INPUT D
A006 INPUT E
A007 INPUT X
A008 RCL X
A009 RCL× A
A010 RCL+ B
A011 RCL× X
A012 RCL+ C
A013 RCL× X
A014 RCL+ D
A015 RCL× X
A016 RCL+ E
A017 RTN
```

Checksum and length: 9E5E 51 :

14

.	.	13		
	/		▪	
		.		
	(	/	)	▪
		.		▪
.			/	▪

.	.	.	.
RTN	/	/	.STOP

(RTN XEQ)

()

.

/

■

/

■

:

A005 GTO B001 →①

.("1 ") ← ①

B001 LBL B ←①

("1 ") → ①

D003 XEQ E001

D

E

) D

RTN

E

.D004

(

		D001 LBL D
		D002 INPUT X
.E	→ ①	D003 XEQ E001
	← ②	D004 STO X
		D005 VIEW X
		D006 RTN
	← ①	E001 LBL E
		E002 +/-
.D	→ ②	E003 RTN

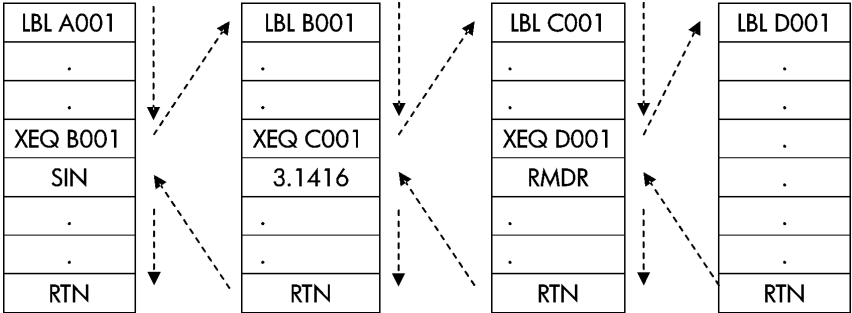
.

" "

.() . 20

.

()



.

.XEQ OVERFLOW 20

:

S

$$\sqrt{a^2 + b^2 + c^2 + d^2}$$

)

.

Q (

.

.

RPN /

.	S001 LBL S
.A	S002 INPUT A
. B	S003 INPUT B
. C	S004 INPUT C
. D	S005 INPUT D
.	S006 RCL D
	S007 RCL C
	S008 RCL B
	S009 RCL A
A ² .	S010 x ²
A ² + B ² .	→ ① S011 XEQ Q001
A ² + B ² + C ²	→ ③ S012 XEQ Q001 ② →
A ² + B ² + C ² + D ²	→ ⑤ S013 XEQ Q001 ④ →
$\sqrt{A^2 + B^2 + C^2 + D^2}$	x√ S014 ⑥ →
.	S015 RTN
.	← ①③⑤ Q001 LBL Q
	Q002 x<>y
	Q003 x ²
.x ²	Q004 +
.S	Q005 RTN ②④⑥ ←

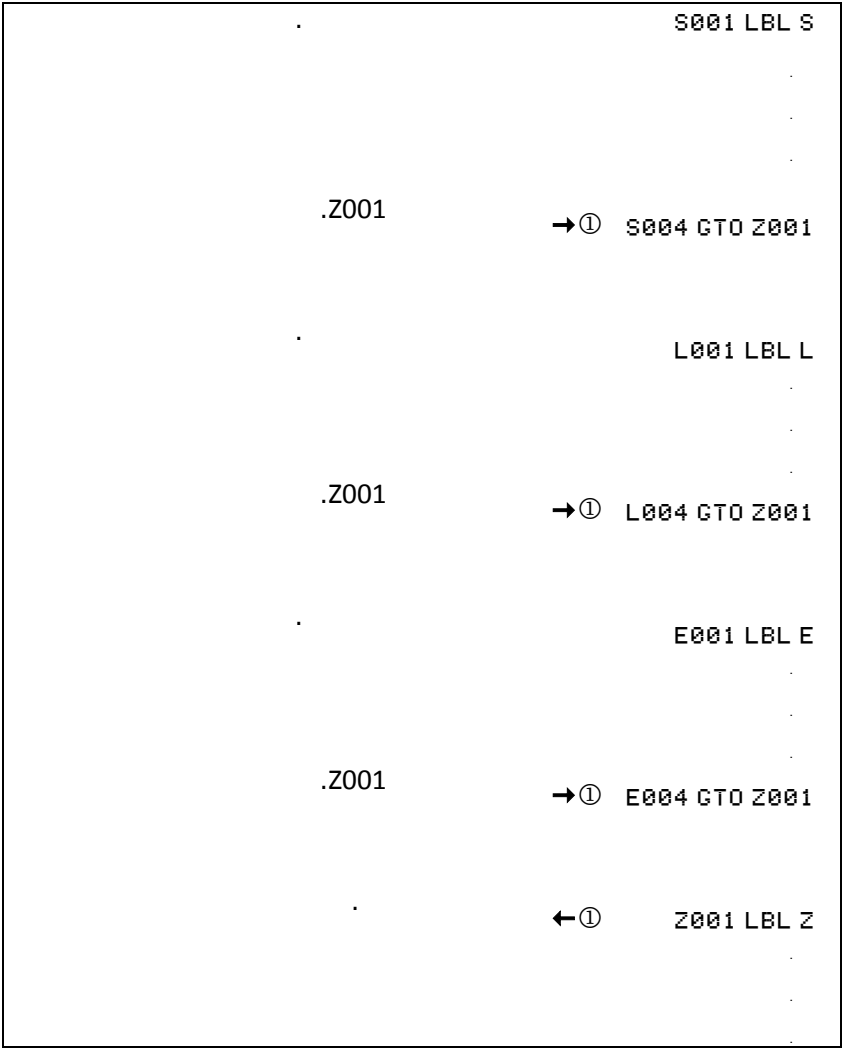
(GTO)

() GTO

.(/)

GTO

(/ GTO) / GTO
/ / .
GTO
GTO Z 001 .16 " "
LBL Z
:

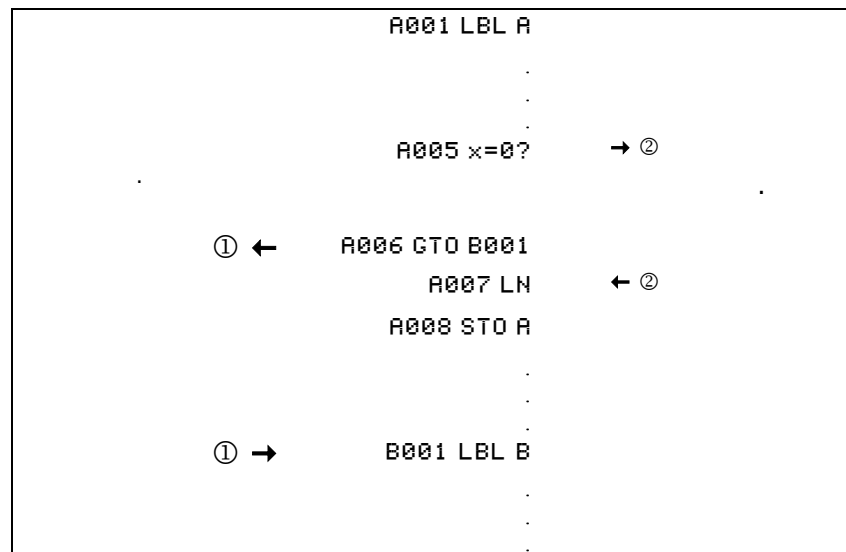


GTO

/ GTO

(1000 <) GTO label line number (/) :
 'GTO A 0 0 5 GTO A 0 0 5
 "GTOA001"
) A001: GTO A ENTER : ... /
 "GTO A001" (

/ . /
 .
 (×) x=0? A005
 X . X
 X
 ." Do if true " . A007



) :
 / (

. X Y X .
 / / /
 . /
 .

(x?0 x?y)

☐ x?0 ☐ x?y

12

. y x x?y
 . x x?0
 .Y y X x
 x?0 x?y . Y X
 .INVALID DATA

x?0			x?y		
x≠0?		≠	x ≠ y?		≠
x≤0?		≤	x≤y ?		≤
x<0?		<	x<y ?		<
x>0?		>	x>y?		>
x≥0?		≥	x ≥y?		≥
x=0?		=	x=y ?		=

.NO | YES

.x<y y=7 x=2 :

:

:

YES 7 ENTER 2 ↩ x?y > > (<) ENTER

RPN

YES 7 x↔y 2 ↩ x?y > > (<) ENTER

ALG

:

$x < y?$ 16 " / " / "

:T

:

(RPN)

.
.
.

T009 ÷

T010 STO+ X

T011 ABS

T012 0.0001

T013 $x < y?$

T014 GTO T001

T015 RCL X

T016 VIEW X

.
.
.

. X_{guess} X
. X_{guess} X

X

T013 . X_{guess} X

T009

() 0.0001

0.0001

.T015

0.0001

T014

/
 / (True) /
 " (False)
 / :"
 . /
 /
 / .11 0 / 12 HP 35s
 12 /
 . B /
 . [RIGHT] [CLEAR] [3] (3ALL) [LEFT] (Y) [ENTER].
 . 4 3 2 1 ■
 . () .
 5 ■
 . ▲ OVERFLOW
 5 .
 OVERFLOW
) TOO BIG
 . 6 / ■
 . (6 /
 TOO BIG 6 /
 .
 . 6 5
 5 /
 6
 .
 7 9 8 7 ■
 /
 . 7 / [RIGHT] [F/DISP]

9	8	7	
/ . /) .(8 /	/ ./c / ./c		/) (/ /

	:	10	▪
	(/) 10 /		
	.		
	10 /		
	.VIEW / ()		
	.	.1	
	.	.2	
. C ←	.	.3	
	/		
.	PSE	.4	
CF SF	10		
	. CF SF /		
-	/ 11	▪	
	:		
∫ _{FN} SOLVE	() 11 /		
.	.		
	. INPUT		
.	11 /		
.	/		
	.		
R/S	/		
()			
	.	R/S	
.	∫ _{FN} SOLVE	11 /	
SF /	CF SF	11	
			CF

/
 4 3 2 1 0
 4 3 2 1 0
 .11 5
 .(/ ") . FS?

/
 SF CF FS? : FLAGS **FLAGS**
 .(11 0) /
 0 / **FLAGS** **1**(1\$F) **0**
FLAGS **1**(1\$F) **0** 10 و / **FLAGS** **1**(1\$F) **0**
 .11 /

FLAGS

.n / . /	SF <i>n</i>
.n / . /	CF <i>n</i>
.n /	FS? <i>n</i>

FS
 " " " " " "
 " NO YES "

1 0 ,SF 1 SF 0 S003 S002
.Y X / S010 S006

: :
:(RPN)

,S / X? XEQ S ENTER
.X
.Y ,X 1 Y? 1 R/S
X ,X 1 X= 1 R/S
. 1.0000
Y Y= R/S
. 1.0000

← ← FLAGS 2 (2CF) 0
. 0 1 FLAGS 2 (2CF) 1

.
. (9 8 7) .
. (10)

: MESSAGE

.(EQN) EQN / .1
RCL letter (/) .2
. SPACE
. / ENTER .3

:	:		
	(RPN	)	
.		LBL F	F001
.		CF 7	F002
		CF 8	F003
		CF 9	F004
.		SF 10	F005
.	/	DEC	F006
.		INPUT V	F007
/		INPUT D	F008
(2 - 4095)			
		RCL V	F009
.		DECIMAL	F010
		PSE	F011
		STOP	F012
		RCL D	F013
.7	/c	/c	F014
		RCL V	F015
		MOST PRECISE	F016
.		PSE	F017
		STOP	F018
.8		SF 8	F019
		FACTOR DENOM	F020
		PSE	F021
		STOP	F022
.9		SF 9	F023
		FIXED DENOM	F024
		PSE	F025
		STOP	F026
.		GTO F001	F027

BE54 123 :

:	:	:	:(RPN)
F /	V?	XEQ F ENTER	
.(V)	value		
V 53 2	D?	2 . 5 3 R/S	
.(D) /	value		
./c 16	DECIMAL	1 6 R/S	
.	16.0000		
	2.5300		
.(16 /)	MOST PRECISE	R/S	
▼ :	2 8/15 ▼		
"	2 8/15		
. "8			
(16 /)	FACTOR DENOM	R/S	
.	2 1/2 ▲		
	2 1/2		
.(16 /)	FIXED DENOM	R/S	
.	2 8/16 ▲		
.10	2.5300	R/S C ← FLAGS	
	2.5300	2 (2CF) . 0	

/

.looping .

D001 LBL D
D002 INPUT M
D003 INPUT N
D004 INPUT T
D005 GTO D001

XEQ label line (/)

number

(GTO)

/

.GTO

B A

B A

:

:

(RPN)

S001 LBL S

S002 INPUT A

S003 INPUT B

A S004 RCL A

.A - B S005 RCL - B

A S006 STO A

S007 RCL B

A < B S008 x<y?

: S009 GTO S004

A : S010 VIEW A

S011 RTN

2737 33 :

(ISG DSE)

ISG /
 .() DSE ()
 . ,

. DSE variable () ,

. ISG variable () ,

:BASIC FOR-NEXT

. FOR-NEXT DSE

(ISG or DSE) DSE ISG shifted
 .()

FOR variable = initial-value TO final-value STEP increment =

. .
 . .
 . .
 NEXT variable

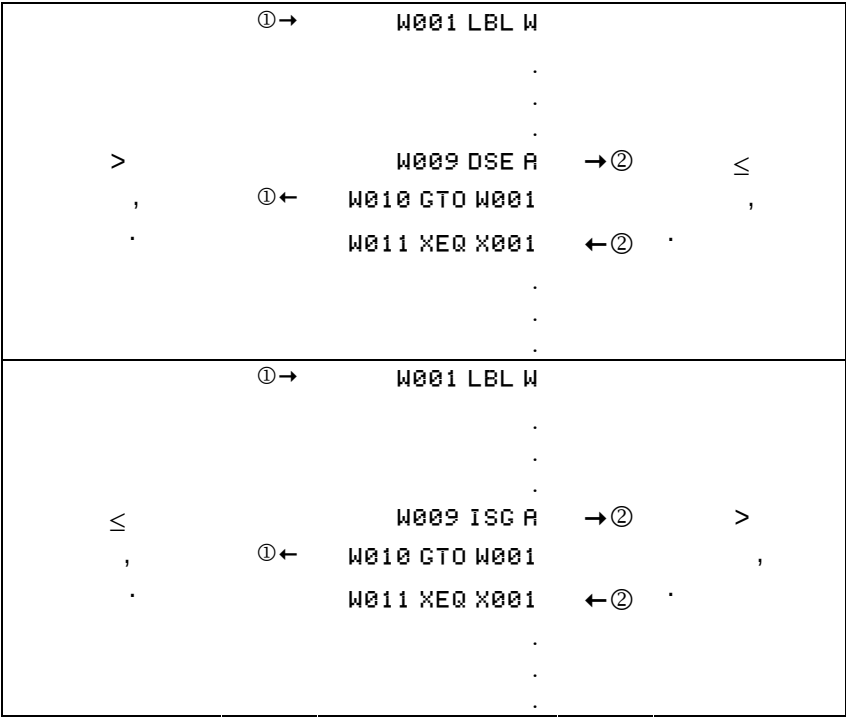
: ±ccccccc.fffii

. .(12 1) ccccccc ▪
 . / .() fff ▪
 .000 fff

. () / ii ■
 .(1 /) 01 ii

ccccccc ccccccc DSE , ccccccc.fffii
 fff ccccccc , - ii
 . fff ≤ ccccccc

ccccccc ISG , ccccccc.fffii
 fff ccccccc , ccccccc + ii
 . fff > ccccccc



, : ISG 0.050 ,
 1 50

(1.010) .RPN 10 ISG
 .Z

```

L001 LBL L
L002 1.01
L003 ST0 Z
L004 ISC Z
L005 GTO L004
L006 RTN

```

,

.11.0100

() / /

/

) , . (

. : /

. / Z A

. / J / ■

.(Z A)

J / " , (J) (I) ■

. "

.(/ Z A) /

/

.

) (J) (I)) (J) (I)

.(J I

"J" "I"

J I , ,

.J I J I .

.(J) "I"

STO I	INPUT I	DSE I
RCL I	VIEW I	ISG I
STO +,-, ×, ÷ I	FN d I f	x < > I
RCL +,-, ×, ÷ I	SOLVE I	

(J) (I) () Z A /
 . () Z A /
 / , J I (J) (I)
 .

: (I)/(J)	: I/J
المتغير A أو التعريف/البطاقة A .	-1
.	.
.	.
.	.
. Z / Z	-26
n	-27
Σx	-28
Σy	-29
Σx^2	-30
Σy^2	-31
Σxy	-32
.	0
/	.
.	.
.	.
.	.
.800 /	800
INVALID (I) :	800> I -32< I
خطأ: INVALID (J)	.
	800> J -32< J
	.

VIEW(J) VIEW(I) INPUT(J) ,INPUT(I)

.

SUMS

. INPUT VIEW STO ,

(J) (I) =FN / (J) (I)

. (J) (I) , , /

STO(I)/(J)	INPUT(I)/(J)
RCL(I)/(J)	VIEW(I)/(J)
STO +, -, ×, ÷, (I)/(J)	DSE(I)/(J)
RCL +, -, ×, ÷, (I)/(J)	ISG(I)/(J)
X<>(I)/(J)	SOLVE(I)/(J)
FN=(I)/(J)	FN d(I)/(J)]

.

(J)/(I)

- /
 (J) STO (I) -
 .A STO(-1) ,
 / ()
 / J
 .ISG DSE

(J)/(I)

(J) (I) . (J) (I)
 J / , () J /
 J I ((J) (I) /) (J) (I)

801 J I

:	:
	(RPN)
	A001 LBL R
	A002 100
	A003 STO I
	A004 12345
" 0-100 "	A005 STO (I)
. 100 /	
" 12345 "	
	A006 150
	A007 STO I
	A008 67890
.150 " 67890 "	A009 STO (I)
. " 0-150 "	
	A010 100
	A011 STO I
	A012 0
. 100 0	A013 STO (I)
. " 0-150 "	
	A014 170
	A015 STO I
/ " INVALID (I)"	A016 RCL(I)
. "170"	
	A017 RTN

	:
(A014) . " INVALID (I)"	.1
0	.2
37 .	0
	.
	. 800 .3

-

-

7

.

.

.

:

.(" SOLVE "

)

.1

)

.

↩

FN=

label (/)

:

.2

.(

.

↩

SOLVE

variable ()

:

.3

FN=

.

.2

INTERRUPTED

R/S

C

,

↩

VIEW

R/S

.

SOLVE

.

- RPN ALG

SOLVE

.

/

.1

(FN=

label "

/

)

```

INPUT . INPUT .2
. INPUT .
.( ) INPUT
, INPUT
.
. .3
/ ALG RPN
f(x) f(x) = g(x)
. "0" .- g(x)
/ -
. /
.11 / INPUT
.X .RTN .4
ALG :
" ALG
: ."
P x V= N x R x T

.( N/m2 ) = P
.( ) = V
. moles = N
= R
( 8.314 J/mole-K و 0.0821 liter-atm/mole-K)
( K=°C + 273.1 :Kelvins ) = T
/
.

```

:	:	:
		(ALG)
.	/	 PRGM
	PRGM TOP	  
		:
:	:	(ALG)
.		G001 LBL G
	P	G002 INPUT P
	V	G003 INPUT V
.	moles N	G004 INPUT N
	R	G005 INPUT R
	T	G006 INPUT T
		G007 P×V=N×R×T
.	×	× Moles =
		×
		G008 RTN

Checksum and length: F425 33 :

.	/	
0.005 moles	"G"	
	24	
:	:	:
		(ALG)
SOLVE	- " G"	 FN= 
		 SOLVE 
.V	P	V?
		value
.N	V 2	N?
		value
.R	N 0,005	R?
		value
.T	R 0,0821	T?
		value
	T	T?
		297.1000
	T 297,1	SOLVING
.0.610 atm	.P	P=
		0.0610
		

```

      "      "
      :      :      :
      /      PRGM TOP      (RPN )
      .      .      .      PRGM
      .      .      .      GTO . .
      .      /      H001 LBL H      LBL H
      .      .      H002 SF 11      FLAG 1 (1SF)
      .11      .      .      . 1
      EDC8 :      )      EQN
      .(9      RCL P X
      .      RCL V 1 =
      .      RCL N X
      .      RCL R X
      .      RCL T ENTER
      .      .      RTN
      .      /      0.0610      C
      Checksum and length of program: DF52 21 :

```

	:	:	:	(RPN)
	.		0.0610	$\rightarrow$ STO L
	" H"		0.0610	$\leftarrow$ FN= H
.V	P		V?	$\rightarrow$ SOLVE P
			2.0000	
.N	V 2		N?	R/S
			0.0050	
.R	N 0,005		R?	R/S
			0.0821	
.T	R 0,0821		T?	R/S
	.	T	297.1000	ENTER 1 0 -
	T 297,1		287.1000	
			SOLVING	R/S
		P	P=	
			0.0589	
		.P	-0.0021	RCL L -
287.1	297.1			
	)			
	.(			

SOLVE

SOLVE

) /
.SOLVE variable () (X
:

FN= label (/)
SOLVE variable ()
SOLVE

(=)
)
.(

.SOLVE VIEW variable ()
)

.(14 " "
,

SOLVE :

.Y XEQ X y x

:	:
	(RPN)

.X	X001 LBL X
.X	X002 24
.	X003 GTO L001

Checksum and length: 62A0 11 :

.Y	Y001 LBL Y
.Y	Y002 25
.	Y003 GTO L001

Checksum and length: 221E 11:

.	L001 LBL L
.I	L002 STO I
.	L003 FN= F
.	L004 SOLVE(I)
.	L005 VIEW(I)
.	L006 RTN

Checksum and length: D45B 18 :

INPUT	/	$f(x,y)$	F001 LBL F
.			.
			.
			F010 RTN

-	- (	)	8
---	-----	---	---

```

:
.( " ∫ FN " ) .1
( / ) : .2
.( ) . [↩] [FN=] label
. [ENTER] : .3
. [↩] [∫] variable ( ) : .4
FN=
.
.
INTERRUPTED [R/S] [C]
. .2
.
. [∫] [FN=] / [XEQ]
. [∫] [FN=]
: ∫ FN
. - RPN ALG
. / .1
.( [FN=] label / )

```


INPUT

ALG RPN

—

.X

```
.11      /      INPUT
      .RTN      .4
```

8

$$Si(t) = \int_0^t \left(\frac{\sin x}{x} \right) dx$$

•

```

      .          /      S001 LBL S
:          ) .      S002 SIN(X)+X
      .(0EE0 8

```

S003 RTN

.D57E 17

$$.(t = 2) \quad 2 \quad 0 \quad x$$

:	:	:
		(RPN)
/		MODE 2 (2RAD)
.Radians		
S		FN= S
.		
	2_	0 ENTER 2
.		
	INTEGRATING	FN / X
.2 0	=∫	
.	1.6054	
/	1.6054	MODE 1 (1DEG)
.		

/	/	.
.		/
		:
		FN= label (/)
		∫ FN d variable ()
(=∫)		∫ FN
		)
PSE (PSE)		.(
∫ FN	X	STOP (R/S)
(10 /)		PSE

FN :

16 " / - / "

$$\frac{1}{S\sqrt{2\pi}} \int_M^D e^{-\left(\frac{D-M}{S}\right)^2/2} dD.$$

$$.F \quad e^{((D-M)\div S)^2 \div 2}$$

Q(D)
:Q

Q001 LBL Q
Q002 RCL M

.(X = D) Q003 RCL X

Q004 FN= F

FN d D j Q005

.D /

I

FN d variable() SOLVE variable ()

FN SOLVE

. FN(j)

FN=label (/)

FN SOLVE

FN

FN ACTIVE

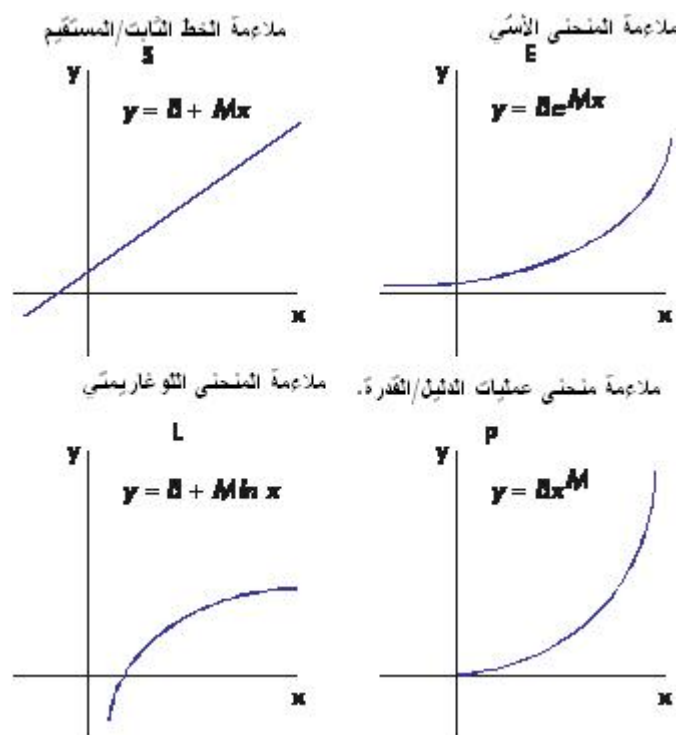
SOLVE ACTIVE

.((SOLVE)) SOLVE

FN SOLVE

.(14 " ") /

HP 35s



y x x y
 $\cdot$ $/$ $\cdot$
 $R \text{ LOG}(\text{NEG})$

.12 " / "

		(RPN)
.	/	S001 LBL S
.X	0	S002 CF 0
Y	1	S003 CF 1
.Z		S004 GTO Z001

Checksum and length: 8E85 12 :

.	/	L001 LBL L
.X	0	L002 SF 0
Y	1	L003 CF 1
.Z		L004 GTO Z001

Checksum and length: AD1B 12 :

.	/	E001 LBL E
.X	0	E002 CF 0
Y	1	E003 SF 1
.Z		E004 GTO Z001

Checksum and length: D6F1 12 :

.	/	P001 LBL P
.X	0	P002 SF 0
Y	1	P003 SF 1

Checksum and length: 3800 9 :

		Z001 LBL Z
 CLEAR  (4Σ)	.	Z002 CLZ
	/	Z003 0

Checksum and length: 8611 10 :

		W001 LBL W
/	1	W002 1

	(RPN)
	W003 +
X / X	W004 STO X
.X	W005 INPUT X
... 0	W006 FS? 0
.X / ...	W007 LN
.	W008 STO B
. Y /	W009 INPUT Y
...1	W010 FS? 1
.Y / ...	W011 LN
	W012 STO R
	W013 RCL B
y x R B	W014 Σ+
. Y X	W015 GTO W001

Checksum and length: 9560 46 :

" Undo "	U001 LBL U
	U002 RCL R
	U003 RCL B
	U004 Σ-
Y X	U005 GTO W001

Checksum and length: A79F 15 :

.	R001 LBL R
.	R002 r
.R	R003 STO R
.	R004 VIEW R

		(RPN)
	.b	R005 b
.b	/	1 R006 FS? 1
		R007 e ^x
	.B b	R008 STO B
	.	R009 VIEW B
	.m	R010 m
	.M m	R011 STO M
	.	R012 VIEW M
Checksum and length: 850C 36 :		
	.()	Y001 LBL Y
.X x	,	Y002 INPUT X
	... 0	Y003 FS?0
	K001	Y004 GTO K001
	M001	Y005 GTO M001
	.Y $\hat{y}$	Y006 STO Y
.Y y	,	Y007 INPUT Y
	... 0	Y008 FS?0
	O001	Y009 GTO O001
	N001	Y010 GTO N001
	. X $\hat{x}$	Y011 STO X
	.	Y012 GTO Y001
Checksum and length: C3B7 36 :		

		(RPN)
.	$\hat{y}$	A001 LBL A
/		A002 RCL M
		A003 RCL× X
	$\hat{y} = MX + B$	A004 RCL+ B
.		A005 RTN
Checksum and length: 9688 15 :		
.	$\hat{x}$	G001 LBL G
/		G002 RCL Y
		G003 RCL− B
	$\hat{x} = (Y - B) \div M$	G004 RCL÷ M
		G005 RTN
Checksum and length: 9C0F 15 :		
.	$\hat{y}$	B001 LBL B
.		B002 RCL X
		B003 LN
		B004 RCL× M
	$\hat{y} = M \ln X + B$	B005 RCL+ B
.		B006 RTN
Checksum and length: 889C 18 :		
.	$\hat{x}$	H001 LBL H
.		H002 RCL Y
		H003 RCL− B
		H004 RCL÷ M
	$\hat{x} = e^{(Y - B) \div M}$	H005 eX
		H006 RTN
Checksum and length: 0DBE 18 :		

(RPN)

$\hat{y}$

C001 LBL C

C002 RCL M

C003 RCL× X

C004 e^X

$$\hat{y} = Be^{MX}$$

C005 RCL× B

.M005

C006 GT0 M005

Checksum and length: 9327 18 :

$\hat{x}$

I001 LBL I

I002 RCL Y

I003 RCL÷ B

I004 LN

$$\hat{x} = (\ln(Y \div B)) \div M$$

I005 RCL÷ M

.N005

I006 GT0 N005

Checksum and length: 7219 18 :

$\hat{y}$

D001 LBL D

D002 RCL X

D003 RCL M

D004 √^X

$$\hat{y} = B(X^M)$$

D005 RCL× B

K005

D006 GT0 K005

Checksum and length: 11B3 18 :

$\hat{x}$

J001 LBL J

J002 RCL Y

J003 RCL÷ B

J004 RCL M

J005 1/x

$$\hat{x} = (Y/B)^{1/M}$$

J006 √^X

O005

J007GT0 O005

Checksum and length: 8524 21 :

			(RPN)
. B001	D001	/	K001 LBL K
	...	1	K002 FS?1
	D001		K003 XEQ D001
	B001		K004 XEQ B001
	Y006		K005 GTO Y006
Checksum and length: 4BFA 15 :			
.A001	C001	/	M001 LBL M
	...	1	M002 FS?1
	C001		M003 XEQ C001
	A001		M004 XEQ A001
	Y006		M005 GTO Y006
Checksum and length: 1C4D 15 :			
.H001	J001	/	O001 LBL O
	...	1	O002 FS?1
	J001		O003 XEQ J001
	H001		O004 XEQ H001
	Y011		O005 GTO Y011
Checksum and length: 0AA5 15 :			
.G001	I001	/	N001 LBL N
	...	1	N002 FS?1
	I001		N003 XEQ I001
	G001		N004 XEQ G001
	Y011		N005 GTO Y011
Checksum and length: 666D 15 :			

$$\frac{1}{X} = \frac{Y}{N}$$

1 / . X / 0 /
 . Y /
 1 . 1001 N 1
 .G001

:

.1
 :
 .2
 :
 . / S ENTER
 . L ENTER
 . E ENTER
 . / P ENTER
 . R/S X .3
 . R/S Y .4
 . 4 3 .5
 R/S (Y?value()) 3 R/S
 XEQ U ENTER (X?value())
 4 . ()
 .3 . XEQ ENTER
 .R XEQ ENTER .6
 . B R/S .7
 . M R/S . 8
 . $\hat{y}, \hat{x}$ X?value() R/S .9
 R/S X?value() x x $\hat{y}$.10
 .(Y?) $\hat{y}$
 Y?value() وذلك حتى تستطيع رؤية R/S y $\hat{x}$. 11
 .(X?) $\hat{x}$ R/S y
 .11 10 .12

.2

.13

(/ y /)
/)
(/ /)
R
x X
y Y

:1

.101 y x 37 x y
34.6 35.1 36.2 37.9 38.6 40.5 X
94 95.5 97.5 100 102 104.5 Y

:
/
x
y
x
y
X?
1.0000
Y?
value
X?
2.0000
Y?
104.5000
X?
3.0000
(RPN)
XEQ S ENTER
4 0 . 5 R/S
1 0 4 . 5 R/S
3 8 . 6 R/S
1 0 2 R/S

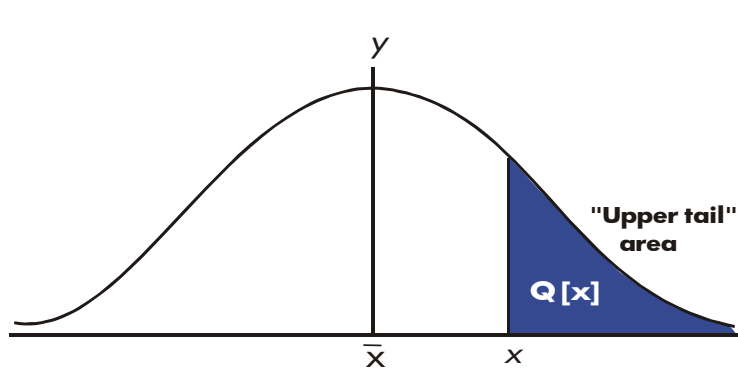
37,9 379

	:	:	:	(RPN)
	X		Y?	3 7 9 R/S
	.		102.0000	
X?			X?	R/S
	.		4.0000	
.			X?	XEQ U ENTER
.			3.0000	
	X		Y?	3 7 . 9 R/S
	.		102.0000	
.	y		X?	1 0 0 R/S
.	.		4.0000	
.	x		Y?	3 6 . 2 R/S
.	.		100.0000	
.	y		X?	9 7 . 5 R/S
.	.		5.0000	
.	x		Y?	3 5 . 1 R/S
.	.		97.5000	
.	y		X?	9 5 . 5 R/S
.	.		6.0000	
.	x		Y?	3 4 . 6 R/S
.	.		95.5000	
.	y		X?	9 4 R/S
.	.		7.0000	
.	.		R=	XEQ R ENTER
.	.		0.9955	
.B			B=	R/S
.	.		33.5271	
.M			M=	R/S
.	.		1.7601	
.	x		X?	R/S
.	.		7.0000	
. $\hat{y}$	X	37	Y?	3 7 R/S
.	.		98.6526	
. $\hat{x}$	Y	101	X?	1 0 1 R/S
.	.		38.3336	

$$\frac{1}{(y - x)}$$

<i>I</i>			
<code>XEQ</code> <code>P</code> <code>ENTER</code>	<code>XEQ</code> <code>E</code> <code>ENTER</code>	<code>XEQ</code> <code>L</code> <code>ENTER</code>	To start:
0.9959	0.9945	0.9965	<i>R</i>
8.9730	51.1312	-139.0088	<i>B</i>
0.6640	0.0177	65.8446	<i>M</i>
98.6845	98.5870	98.7508	when $X=37$) $\hat{Y}$ Y (
38.3151	38.3628	38.2857	when $\hat{X}$ X (
			$Y=101$)

. /
 S M /
 / x .
 .Q(x) . Q(x) : /



"Upper
 tail" area

$$Q(x) = 0.5 - \frac{1}{\sigma\sqrt{2\pi}} \int_{\bar{x}}^x e^{-((x-\bar{x})/\sigma)^2/2} dx$$

HP 35s /
 Newton / . /
 .Q(x) / x /

	(RPN)
.	S001 LBL S
/	
.	S002 0
/	
.	S003 STO M
M	S004 INPUT M
/	
.	S005 1
.	S006 STO S
S	S007 INPUT S
/	
.	S008 RTN

Checksum and length: 70BF 26 :

.X	Q(X)	D001 LBL D
.	X	D002 INPUT X
/		
.		D003 XEQ Q001
VIEW	Q	D004 STO Q
.	Q(X)	D005 VIEW Q
.	Q(X)	D006 GTO D001

Checksum and length: 042A 18 :

.Q(X)	X	I001 LBL I
.	Q(X)	I002 INPUT Q
/		
.		I003 RCL M
X _{guess}	X	I004 STO X

Checksum and length: A970 12 :

.		T001 LBL T
	(Q(X _{guess}) - Q(X))	T002 XEQ Q001

(RPN)

			T003 RCL- Q
			T004 RCL X
			T005 STO D
			T006 R↓
	X_{guess}		T007 XEQ F001
			T008 RCL÷ T
	X_{guess}		T009 ÷
	X_{guess}		T010 STO+ X
			T011 ABS
			T012 0.0001
			T013 x<y?
			T014 GTO T001
			T015 RCL X
		X	T016 VIEW X
	X		T017 GTO I001
	Checksum and length: EDF4 57 :		
$.Q(x)$			Q001 LBL Q
			Q002 RCL M
			Q003 RCL X
		LBL F	Q004 FN= F
$.D$	$/$	$/$	FN ÷ D ÷ Q005
			Q006 2
			Q007 π
			Q008 x

(RPN)

	$\times \sqrt{Q009}$
$S \times \sqrt{2\pi}$	Q010 RCL× S
/	Q011 STO T
	Q012 ÷
	Q013 +/-
	Q014 0.5
	Q015 +
.	/
.	Q0016 RTN

Checksum and length: 8387 52 :

$.e^{-((X-M)\div S)^2\div 2}$	F001 LBL F
	F002 RCL D
	F003 RCL- M
	F004 RCL÷ S
	F005 x ²
	F006 2
	F007 ÷
	F008 +/-
	F009 e ^x
.	F010 RTN

Checksum and length: B3EB 31 :

	:	/
	.	
	:	
±3	.	/
	.	
	±5	
	.	

$\boxed{1/x}$ 2 Q 0,5

(T I	) /		
		.	/
		:	
	.	C	.1
		.	
		. XEQ S ENTER	.2
) R/S	/	M	.3
		.	(R/S
) R/S		S	.4
	.	(R/S	1
	9	Q(X)	X .5
		. XEQ D ENTER	X Q(X) .6
	Q(X)	. R/S	X .7
R/S		X	Q(X) .8
			.7
		. XEQ I ENTER	X Q(X) .9
	X	. R/S	Q(X) .10
R/S		Q(X)	X .11
			.10
		:	
	.	/	D
			M
			Q
			S
$S \times \sqrt{2\pi}$		T	
	.	/	
			X

"3σ"

/

000 10

M

"3σ"

.S 1

□ □

□ □

—

(RPN)

M? XEQ S ENTER
0.0000

0.0000

.M

S?
1.0000

1.0000

.S 1

1.0000 R/S

X

X? XEQ D ENTER
value

value

$$X \quad 3$$

Q= 0.0013 3 R/S

0.0013

 $\cdot Q(X)$

/

13.4984 1 0 0 0 0
 ×

. "2σ"

R/S

□ □

■ ■

—

(RPN)

X?
3.0000 R/S

3.0000

2 x

Q= **2 R/S**

0.0228

$$.Q(X)$$

227.5012 1 0 0 0 0
 x



:2

.3 15		.55		/
/	.		/	
10			90	
:	:	:		
		(RPN)		
.		M?	XEQ	S
		0.0000	ENTER	
.	/	S?	5	5
55		1.0000	R/S	
3 15		15.3000	1	5
.			.	3
			R/S	
.X		X?	XEQ	D
		value	ENTER	
X	90	Q=	9	0
.Q(X)		0.0111	R/S	
.90				
:	:	:		
		(RPN)		
.	/	Q?	XEQ	1
		0.0111	ENTER	
Q(X)	(	X=	0	.
10) 0.1		74.6077	1	R/S
.X				
.	/	Q?		R/S
		0.1000		
20	100) 0,8	X=	0	.
.X	Q(X) (	42.1232	8	R/S

x_1

s_{xy}

$f_n \dots f_2 f_1$

$x_n \dots x_2$

$$s_{xy} = \sqrt{\frac{\sum x_i^2 f_i - \frac{(\sum x_i f_i)^2}{\sum f_i}}{(\sum f_i) - 1}}$$

/

:

(ALG)

. S001 LBL S

.(- 32 - 27) S002 CLZ

S003 0

.N S004 STO N

Checksum and length: E5BC 13 :

. I001 LBL I

.X I002 INPUT X

.F I003 INPUT F

.N I004 1

I005 STO B

. f_i I006 RCL F

Checksum and length: 3387 19 :

. / F001 LBL F

F002 -27

.- 27 F003 STO I

F004 RCL F

. - 27 $\sum f_i$ F005 STO+(I)

$x_i f_i$ F006 RCL× X

F007 STO Z

F008 -28

.- 28 F009 STO I

F010 RCL Z

. - 28 $\sum x_i f_i$ F011 STO+(I)

$x_i^2 f_i$ F012 RCL× X

.- 30 F013 STO Z

F014 -30

F015 STO I

F016 RCL Z

. - 30 $\sum x_i^2 f_i$ F017 STO+(I)

	F018 RCL B
. N ()	F019 STO+ N
	F020 RCL N
	F021 RCL F
	F022 ABS
	F023 STO F
	F024 VIEW N
/	F025 GTO I001

Checksum and length: F6CB 84 :

	G001 LBL G
	G002 s×
	G003 STO S
	G004 VIEW S
/	$\overline{x}$ G005
	G006 STO M
/	G007 VIEW M
	G008 GTO I001

Checksum and length: DAF2 24 :

	U001 LBL U
N	U002 -1
	U003 STO B
	U004 RCL F
f_i	U005 +/-
	U006 STO F
/	U007 GTO F001

Checksum and length: 03F4 23 :

: /

		:	
	.	C	.1
	.	XEQ S ENTER	.2
	.	R/S () x_i	.3
	.	R/S () f_i	.4
	.	VIEWing R/S	.5
	.	5 3	.6
4	R/S	$(f_i \quad x_i)$	
	3	R/S XEQ U ENTER	
		XEQ G ENTER	.7
	.	R/S	.8
	.3	R/S	.9
	:	.2	.
	.	X	
	.	F	
	.	N	
	.	S	
	.	$/$	M
	.		i
		Σf_i	Register -27
		$\Sigma x_i f_i$	Register -28
		$\Sigma x_i^2 f_i$	Register -30

6	5	4	3	2	1	
37	22	15	13	8	5	x_i
115	73	43	37	26	17	f_i

	:		:		:	(RPN)
	.	x_i		X?	XEQ	S ENTER
				value		
f_i		X	5	F?	5	R/S
			.	value		
		F	17	N=	1	7 R/S
			.	1.0000		
	.	x_i		X?		R/S
				5.0000		
	.	f_i		F?	8	R/S
				17.0000		
	.			N=	2	6 R/S
				2.0000		
	.	x_i		X?		R/S
				8.0000		
	.	f_i		F?	1	4 R/S
				26.0000		
	.			N=	3	7 R/S
				3.0000		
:U			. x3	13	14	
				N=	XEQ	U ENTER
				2.0000		
		x_i		X?		R/S
				14.0000		
		f_i		F?	1	3 R/S
				37.0000		
				N=		R/S
				3.0000		
		x_i		X?		R/S
				13.0000		
		f_i		F?	1	5 R/S
				37.0000		
				N=	4	3 R/S
				4.0000		
		x_i		X?		R/S
				15.0000		
		f_i		F?	2	2 R/S
				43.0000		
				N=	7	3 R/S
				5.0000		

x_i		X?	R/S
		22.0000	
f_i		F?	3 7 R/S
		73.0000	
		N=	1 1 5 R/S
		6.0000	
		S=	XEQ G ENTER
(sx)		11.4118	
.			
		M=	R/S
$.(\bar{X})$	/	23.4084	
.VIEW	/	23.4084	C

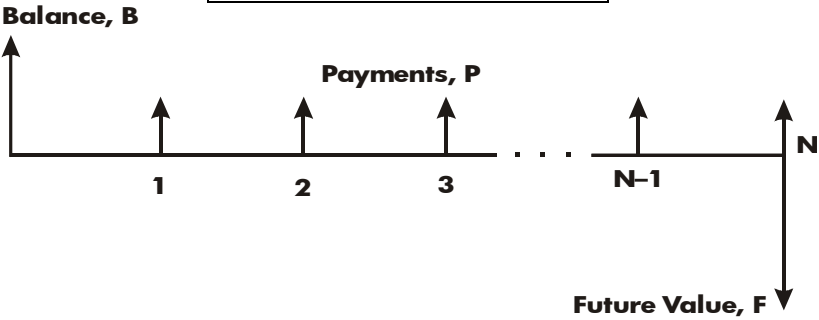
(TVM) "

.

: TVM

$$P\left[\frac{1-(1+I/100)^{-N}}{I/100}\right]+F(1+(I/100))^{-N}+B=0$$

Balance
Payments
Future Value



$$(F + P \cdot \frac{1 - (1 + I/100)^{-N}}{I/100}) \cdot (1 + I/100)^{-N} + B = 0$$

:

$$P \times 100 \times (1 - (1 + I \div 100)^{-N}) \div I + F \times (1 + I \div 100)^{-N} + B$$

:

:

(RPN)

/

EQN LIST TOP

[EQN]

P×100_

[RCL] [P] [×] [1] [0] [0]

P×100×(1-)

[×] [()] [1] [-]

P×100×(1-(1+))

[()] [1] [+]

←0×(1-(1+I÷100))→

[RCL] [I] [÷] [1] [0] [0]

←(1-(1+I÷100))^→

[>] [y^x]

←(1+I÷100)^-N)_

[+/-] [RCL] [N] [>]

←100)^-N)÷I+F×

[÷] [RCL] [I] [+]

[RCL] [F]

←^-N)÷I+F×(1+I)

[×]

←I+F×(1+I÷100)_

[()] [1] [+]

[RCL] [I]

←×(1+I÷100)^-N_

[÷] [1] [0] [0] [>]

←1+I÷100)^-N+B_

[y^x] [+/-] [RCL] [N]

P×100×(1-(1+I÷

[+]

[RCL] [B]

CK=CEFR
LN=41

[ENTER]

[SHOW] (hold)

:

. DIVIDE BY 0

/

TVM

SOLVE

[1] [→] [STO] [I]

/

[()] [→] [SOLVE] [I]

: SOLVE

. 1	→	STO	I	|	TVM	.1
	↓		↑		.EQN	.2
					.TVM	
				:		.3
					→ SOLVE N	.
					→ SOLVE I	.
12	×			/		
					→ SOLVE B	.
				/	→ SOLVE P	.
					→ SOLVE F	.
				/		.4
					R/S	.5
.2						.6

SOLVE

:

N

I

B

P

F

).
/ 12 %15
.15÷12=1.25% i

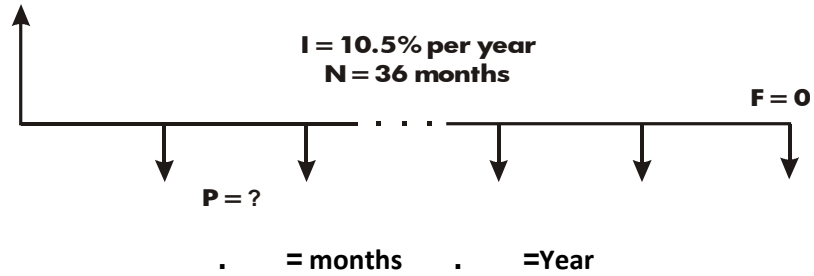
10% 5

(36)

.1

1 \$500.

$$B = 7,250 - 1,500$$



:

:

(RPN)

FIX

DISPLAY 1 (1FIX) 2

. 2

$P \times 100 \times (1 - (1 + I)^{-N}) \div I$ EQN (as needed)

.TVM

.I /

I? $\rightarrow$ SOLVE P
 value
 I? 1 0 . 5 ENTER
 0.88 1 2 $\div$

I 88 0
 .N /

N? $\rightarrow$ R/S
 value

N 36
 .F /

F? $\rightarrow$ 3 6 R/S
 value

.F

B?

0 R/S

.B	/	value
B		B? 7 2 5 0 ENTER
.		5,750.00 1 5 0 0 -
B	5750	SOLVING R/S
.P	/	P=
		-186.89

) . / (

. /

\$10

.2

:	:		(RPN)
		$P \times 100 \times (1 - (1 + I)^{-N})$	EQN
		.TVM	
.P / .I		P?	SOLVE I
		-186.89	
/		P?	RND
.		-186.89	
/		P?	1 0 +
		-176.89	
.P 89 176 -		N?	R/S
.N /		36.00	
/ .N 36		F?	R/S
.F		0.00	
/ .F 0		B?	R/S
.B		5,750.00	
.B 5750		SOLVING	R/S
		I=	
		0.56	
		6.75	1 2 x

. (%75 6) .3

DIVIDE BY 0

2 /
/

:	:		(RPN)
		$P \times 100 \times (1 - (1 + I)^{-N})$	EQN
		.TVM	
.P / F		P?	SOLVE F
		-176.89	

/	P		I?	R/S
		.I	0.56	
/	0.56		N?	R/S
	.N	/	36.00	
.N	24		B?	2 4 R/S
	.B	/	5,750.00	
B	5750		SOLVING	R/S
	F		F=	
			-2,047.05	
/				
FIX		/		DISPLAY 1
		4		(1FIX) 4

) .3 (1

.

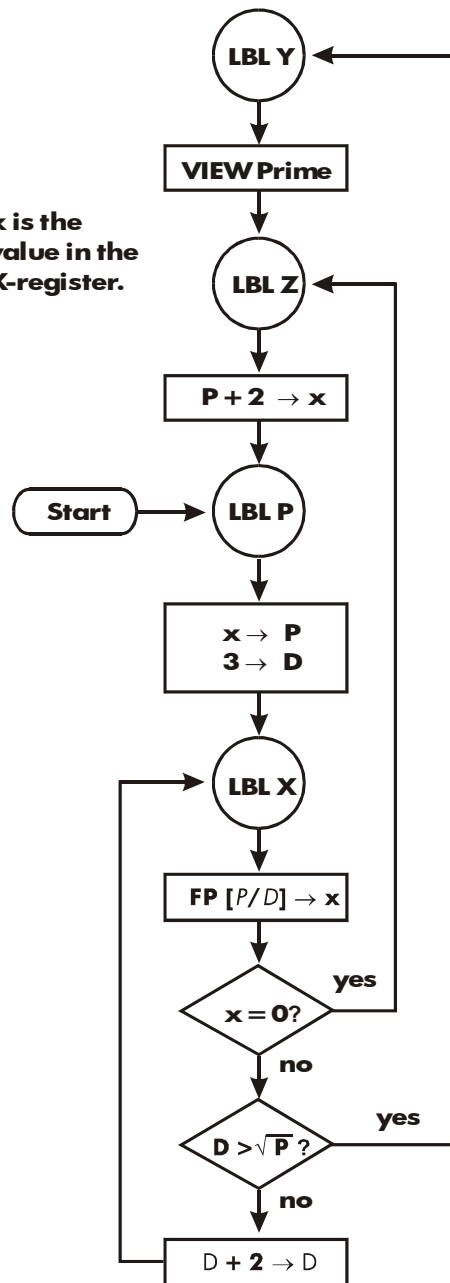
.

.

() 2

x :
.X

Note: x is the value in the X-register.



:

(ALG)

P Y001 LBL Y

Y002 VIEW P

Checksum and length: 2CC5 6 :

$.P$ 2 Z001 LBL Z

Z002 2+ P

Checksum and length: EFB2 9 :

$.P$ P001 LBL P

P002 LASTx► P

P003 FP(P÷2)

P004 x<>v

P005 0

P006 x=v?

$. P$ P007 1+P►P

$.D$ 3 P008 3►D

Checksum and length: EA89 47 :

P X001 LBL X

$.P \div D$ X002 FP(P÷D)

) / X003 x=0?

(

X004 GTO Z001

X005 SQRT(P)

X006 x<>v

X007 D

X008 x>v?

X009 GTO Y001

X010 2+D►D

X011 GTO X001

Checksum and length: C6B5 53 :

: /

.

:

. [C]

.1

.3

.2

. P

[XEQ] [P] [ENTER]

.3

. [R/S]

.4

:

.
P

P
D

:

.3

:

789

:

:

(ALG)

.789

P=
797.0000

[7] [8] [9] [XEQ]
[P] [ENTER]

.797

P=
809.0000

[R/S]

$$\mathbf{v}_1 \times \mathbf{v}_2 = (YW - ZV)\mathbf{i} + (ZU - XW)\mathbf{j} + (XV - YU)\mathbf{k}$$

$$\mathbf{v}_1 = X\mathbf{i} + Y\mathbf{j} + Z\mathbf{k}$$

$$\mathbf{v}_2 = U\mathbf{i} + V\mathbf{j} + W\mathbf{k}$$

(RPN)

R001 LBL R

X

R002 INPUT X

Y

R003 INPUT Y

Z

R004 INPUT Z

R001

R005 GT0 R001

Checksum and length: D82E 15 :

E001 LBL E

W V U Z Y X

E002 RCL X

E003 STO U

E004 RCL Y

E005 STO V

E006 RCL Z

E007 STO W

R001

E008 GT0 R001

Checksum and length: B6AF 24 :

	(RPN)
.	C001 LBL C
	C002 RCL Y
	C003 RCLx W
	C004 RCL Z
	C005 RCLx V
.X / (YW - ZV)	C006 -
	C007 STO A
	C008 RCL Z
	C009 RCLx U
	C010 RCL X
	C011 RCLx W
.Y / (ZU - WX)	C012 -
	C013 STO B
	C014 RCL X
	C015 RCLx V
	C016 RCL Y
	C017 RCLx U
	C018 -
.Z / (XV - YU)	C019 STO Z
	C020 RCL A
.X /	C021 STO X
	C022 RCL B
.Y /	C023 STO Y
.	R001 C024 GTO R001

Checksum and length: 838D 72 :

:

$$v_2 = i - 2j + 3k \text{ و } v_1 = 2i + 5j + 4k$$

	:		:		:
			value	X?	XEQ R ENTER
	.				
.x	/	v2	value	y?	1 R/S
.y	/	v2	value	z?	2 +/- R/S
.z	/	v2	value	X?	3 R/S
v2		E	1	X?	XEQ E ENTER
.W	V	U	1		
.x	/	v1	-2	y?	2 R/S
.y	/	v1	3	z?	5 R/S
.z	/	v1	2	X?	4 R/S
		C	23	X?	XEQ C ENTER
	x	/			
.					
y	/		-2	y?	R/S
.					
z	/		-9	z?	R/S
.					



A

.

"

.

" /

.Error! Bookmark not defined.

/

:

.

A-5 :

.

:

. (2 3 - 1)  DISPLAY 5 (5.) / :

:

.(21-1)  DISPLAY :

/ / :

) x / CLEAR  CLEAR :

(X

.

. (2.51E-13) "E" :

$$\cdot (2.51 \times 10^{-13}) \quad / \quad :$$

```

MEMORY FULL :

```

$$\frac{1}{2} \left(\frac{1}{2} + \frac{1}{2} \right) = \frac{1}{2}$$
radians π (/) :
$$\frac{12}{\pi} \text{ / } :$$
$$\frac{1}{2} \quad \frac{1}{2}$$

.3GRD 2RAD **MODE** 1DEG / / :

•

1 " " . :

•

. **FDISP** :

/

•

•

$$\begin{array}{rclcl} & .(& 113^{\circ} & 32^{\circ}) & 45^{\circ} & 0^{\circ} & : & \blacksquare \\ 149^{\circ} & -4^{\circ}) & 65^{\circ} & & & -20^{\circ} & : & \blacksquare \end{array}$$

65° -20° : ■

104°) 40° 90% : .(■

 $\cdot$ (

3

. ()

MEMORY CLEAR

). .

(.

:

.1

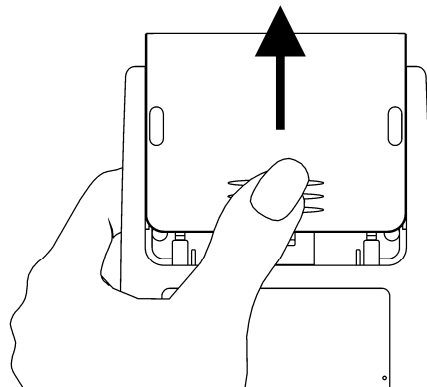
()

.()

.2

/

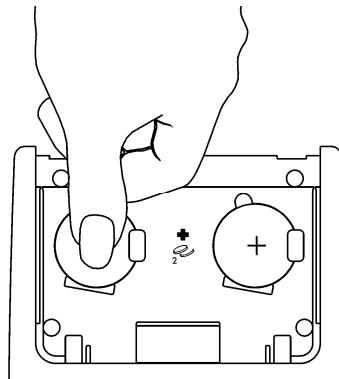
.3



.4



(+) CR2032 .5



(+) 5 4 .6

.7

. **C** .8

.Error! Bookmark not defined.

(4-1) / ■

:(3-1)

. **GTO** **C** .1

. **i** **R/S** **C** / .2

MEMORY CLEAR

/

MEMORY

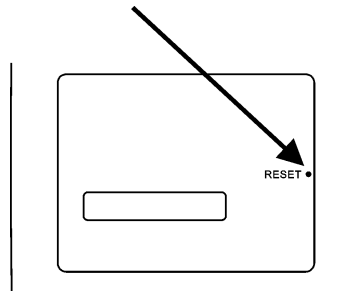
(" ") .3

.CLEAR

.3

.RESET

RESET



: ■
.() .1

.2

.A-1 " / " .

. Error! Bookmark not defined. .3



:

XEQ

C

-1

-2

© 2007 HP DEV CO., L. P. /

.KBD 01

-3

$\boxed{R/S} \rightarrow \boxed{GTO} \rightarrow \boxed{XEQ} \rightarrow \boxed{MODE} \rightarrow \boxed{\wedge} \rightarrow \boxed{<} \rightarrow \boxed{>} \rightarrow \boxed{RCL} \rightarrow \boxed{R\downarrow} \rightarrow \boxed{x\leftrightarrow y} \rightarrow \boxed{i}$
 $\rightarrow \boxed{\vee} \rightarrow \boxed{SIN} \rightarrow \boxed{COS} \rightarrow \boxed{TAN} \rightarrow \boxed{\sqrt{x}} \rightarrow \boxed{y^x} \rightarrow \boxed{1/x} \rightarrow \boxed{ENTER} \rightarrow \boxed{+/-} \rightarrow \boxed{E} \rightarrow \boxed{() } \rightarrow \boxed{\leftarrow} \rightarrow \boxed{EQN} \rightarrow \boxed{7}$
 $\rightarrow \boxed{8} \rightarrow \boxed{9} \rightarrow \boxed{\div} \rightarrow \boxed{\leftarrow} \rightarrow \boxed{4} \rightarrow \boxed{5} \rightarrow \boxed{6} \rightarrow \boxed{\times} \rightarrow \boxed{\rightarrow} \rightarrow \boxed{1} \rightarrow \boxed{2} \rightarrow \boxed{3} \rightarrow \boxed{-} \rightarrow \boxed{C} \rightarrow \boxed{0} \rightarrow \boxed{\cdot}$
 $\rightarrow \boxed{\Sigma+} \rightarrow \boxed{+}$

KBD

.() .

.(4)

:

.5

35S-OK

35S-FAIL

($\boxed{GTO}$ $\boxed{C}$) Reset

)

/ .(Error! Bookmark not defined.

) Reset

($\boxed{GTO}$ $\boxed{C}$)

$\boxed{MODE}$ $\boxed{C}$

			12 :	HP 35s	
	HP			HP	.1
HP	.				
		HP			
	.				
			HP	HP	.2
HP			HP	.	
.	.		/		
			HP	HP	.3
				HP	
			HP	.	.4
()			() :		.5
		() HP			
			()		
				()	

. HP .6

.
.
.
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.7

Hewlett

()

Packard

.
.
/
HP .8
HP

:

.

/

	:	AP
--	---	----

03-9841-5211
1300-551-664
010-68002397
2805-2563
+65 6100 6682
+852 2805-2563
+65 6100 6682
09-574-2700
+65 6100 6682
6100 6682
2-561-2700
+852 2805-2563
+65 6100 6682
+65 6100 6682

	:	EMEA
01 360 277 1203		
02 620 00 86		
02 620 00 85		
296 335 612		
82 33 28 44		
09 8171 0281		
01 4993 9006		
069 9530 7103		
210 969 6421		
020 654 5301		
01 605 0356		
02 754 19 782		
2730 2146		
23500027		
021 318 0093		
495 228 3050		
0800980410		
913753382		
08 5199 2065		
022 827 8780 (الفرنسية)		
01 439 5358 (الالمانية)		
022 567 5308 (الايطالية)		
0207 458 0161		

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1-800-711-2884
001-800-872-2881 ♦ 800-711-2884
1-800-0164 ♦ 800-711-2884
001-800-711-2884
(009) 800-541-0006
0-800-10111
1-877 232 0589
1-800-478-4602
01-800-711-2884
1-800-711-2884
1-800-711-2884
156 ♦ 800-711-2884
1-800-711-2884
01-800-711-2884
1-800-711-2884
0004-054-177
0-800-474-68368 (0-800 HP INVENT)

	:	NA
800-HP-INVENT		
800-HP INVENT		

<http://www.hp.com>

15

B

.FCC

• ☐

• ☐

• ☐

• ☐

FCC

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FCC

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(1) :

.FCC

15

(2)

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B

Avis Canadien

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

:

2006/95/EC

EMC 2004/108/EC

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取扱説明書に従って正しい取り扱いをして下さい。

⋮



B

/

(/) /

/

30 HP 35s

∫ FN SOLVE

.()

.(" " ∫ FN) .

. /

MEMORY FULL

: . () /

.(6 " / ")

.(13 " / ")

( CLEAR 3 (3ALL)) /

. MEM

/

.  CLEAR  (3ALL)

/

/

.

.

/

/

/

:()

. 

.1

. 

.2

(

)

. 

.3

MEMORY CLEAR

.

(/)	. /	
		. /
		/ /
/		
" , "		
"1,000"		
4095		(/c) /
FIX 4		
/		/
xiy		/
		/
EQN LIST TOP	EQN LIST TOP	
/	/	
		/ = FN
PRGM TOP	PRGM TOP	
/	/	
/	/	
/	/	
RPN		

/

.

/

/

.X

.(" 2)

/

CLEAR **5** (5STK) CLEAR **1** (1X) ENTER

. -T -Z -Y .X

CLx

/ INPUT /

(X)

: /

DEG, RAD, GRAD PSE 1 (1VAR)** EQN	FIX, SCI, ENG, ALL SHOW STOP 2 (2PGM)** FDISP	DEC, HEX, OCT, BIN RADIX . RADIX , and xiy r θ a	CLVARS CLΣ * and * label nnn
.CLx *			
/ **			
. {PGM} {VAR}			

LAST X /

:RPN	LAST X	X
$+, -, \times, \div$	$, x^2, \sqrt{x}$	$e^x, 10^x$
LN, LOG	$\sqrt[y]{x} y^x,$	$1/x, \text{INT}\div, \text{Rmdr}$
SIN, COS, TAN	ASIN, ACOS, ATAN	$\hat{\sigma} \hat{\sigma}$
SINH, COSH, TANH	ASINH, ACOSH, ATANH	IP, FP, SGN, INTG, RND, ABS
%, %CHG	$\Sigma+, \Sigma-$	$\text{RCL}+, -, \times, \div$
	HMS $\rightarrow$, $\rightarrow$ HMS	$\rightarrow$ DEG, $\rightarrow$ RAD
nCr nPr	!	ARG
CMPLX $+, -, \times, \div$	CMPLX $e^x, \text{LN}, y^x, 1/x$	CMPLX SIN, COS, TAN
$\rightarrow$ kg, $\rightarrow$ lb	$\rightarrow$ $^{\circ}\text{C}$, $\rightarrow$ $^{\circ}\text{F}$	$\rightarrow$ cm, $\rightarrow$ in
$\rightarrow$ l, $\rightarrow$ gal	$\rightarrow$ KM $\rightarrow$ MILE	

.LAST X /c

LASTx x **X** **RCL** **+** *variable* ()

.LASTx ☒X ☐RCL *variable* () ☐+

:	LAST X	ALG	/
---	--------	-----	---

.ALG

RPN

T, Z Y X

. REGT REGZ REGY REGX /

.   

.-T -Z -Y -X



.

.

. REGT REGZ REGY REGX



REGX x REGY x REGZ x REGT

.T Z Y

Z Y.X

.X

.HP35s

C

ALG :

ALG

: ALG /

( LN  e^x  LOG  10^x)

16 2 8 /

.

.ALG

 4 (4RLG)

.

ALG

ALG

.

ALG

/

.1



(!)

.2

TAN SIN COS

/

.3

FP IP RAND RND % $\sqrt[3]{x}$ π $\sqrt{x}$ $1/x$ x^2 LN LOG ATAN ASIN ACOS

. 10^x e^x ABS Rmdr INT÷ %CHG nCr nPr SGN INTG

$.y^x$ $\sqrt[x]{y}$.4

.+/-	.5
÷ ×	.6
- +	.7
=	.8

ALG

.ALG

ALG

/

:ALG

	▪
( ) /	▪
( %CHG )	▪
( nPr  nCr)	▪
( INTG 3)(3Rmdr)  INTG 2(2INTG÷))	▪

(   )

ALG

.

:

12+3
15.0000
12-3
9.0000
12×3
36.0000
12÷3
4.0000

:

:

12 + 3
12 − 3
12 × 3
12 ÷ 3

/

. [ENTER]

 $y^{y^x} x$ x y

ALG

:

:

:

$$12^3$$

$$1,728.0000$$
[1][2][y^x][3][ENTER] 12^3

$$\text{XROOT}(3,64)$$

$$4.0000$$
[←][$\sqrt[y]{x}$][3][>][6][4][ENTER]
$$64^{1/3}$$
 (cube root)
()

.100

[%]

.

/

:

:

:

$$\%(200,27)$$

$$54.0000$$
[$\rightarrow$][%][2][0][0][>][2][7][ENTER]

.200 %27

$$200 - \%(200,27)$$

$$146.0000$$
[2][0][0][−][$\rightarrow$][%][2][0][>][2][7][ENTER]

.%27 -200

$$25 + \%(25,12)$$

$$28.0000$$
[2][5][+][$\rightarrow$][%][2][5][>][1][2][ENTER]

.%12+25

:	:
[$\rightarrow$][%] y [>] x [ENTER]	y $x\%$
[←][%CHG] y [>] x [ENTER]	$(y \neq 0) x$ y

:

.

\$12 16

76 15

:

:

:

%2 2

$$\%CHG(16,12,15,7)$$

$$-2.2333$$

[←][%CHG][1][6][−][1][2][>][1][5][−][7][6][ENTER]

.

/

:

10

14

:

:

:

nCr(24,6) $\leftarrow$ nCr 2 4 $\rightarrow$ 6
 134,596,0000 ENTER

$\leftarrow$ INTG 3 (3Rmdr) $\leftarrow$ INTG 2 (2INTG $\div$)

$\leftarrow$ INTG 2 (2INTG $\div$) Integer 1 $\rightarrow$ Integer 2. ENTER Integer 1:1

$\leftarrow$ INTG 3 (3Rmdr) Integer 1 $\rightarrow$ Integer 2. ENTER Integer 2:2

:

9 $\div$ 58

:

:

:

IDIV(58,9) $\leftarrow$ INTG 2 (2INTG $\div$)
 6.0000 5 8 $\rightarrow$ 9 ENTER
 RMDR(58,9) $\leftarrow$ INTG 3 (3Rmdr) 5
 4.0000 8 $\rightarrow$ 9 ENTER

/

/

:

$$\frac{30}{85-12} \times 9$$

-107.6471

3 0 ÷ 8 5 - 1 2 × 9

85 12

.
:
/

: : :

3 0 ÷ () 8 5 -

30÷(85-)

.

.12-85

30÷(85-12)_

1 2 >

.73/30

30÷(85-12)×9_

× 9

-85) /30

ENTER

.9×(12

30÷(85-12)×9
3.6986

(x)

2 × (5 - 4)

/

2 **×**

2 () 5 - 4

:	:	:
LN(1) 0.0000	LN 1 ENTER	/ (e /)
LOG(10) 1.0000	LOG 1 0 ENTER	/) (10
EXP(2) 7.3891	e^x 2 ENTER	/
ALOG(2) 100.0000	10^x 2 ENTER	/) (

MODE **1** (1DEG)

:	:	:	:
SIN(30) 0.5000	SIN 3 0 ENTER	Sine of x.	x
COS(60) 0.5000	COS 6 0 ENTER	Cosine of x.	x
TAN(45) 1.0000	TAN 4 5 ENTER	Tangent of x.	x /
ASIN(1) 90.0000	ASIN 1 ENTER	Arc sine of x.	x
ACOS(0) 90.0000	ACOS 0 ENTER	Arc cosine of x.	x
ATAN(0) 0.0000	ATAN 0 ENTER	Arc tangent of x.	x /

:	:	:	:
ENTER	HYP SIN ,	Hyperbolic sine of x (SINH).	x
ENTER	HYP COS ,	Hyperbolic cosine of x (COSH).	x
ENTER	HYP TAN ,	Hyperbolic tangent of x (TANH).	/ x
ENTER	HYP ASIN ,	Hyperbolic arc sine of x (ASINH).	x
ENTER	HYP ACOS ,	Hyperbolic arc cosine of x (ACOSH).	x
ENTER	HYP ATAN ,	Hyperbolic arc tangent of x (ATANH).	/ x

:	:	:
IP(2.47)	INTG (6IP) .	47 2
2.0000		
FP(2.47)	INTG (5FP) .	47 2
0.4700		
ABS(-7)	ABS	7-
7.0000		
SGN(9)	INTG (1SGN)	9
1.0000		
INTG(-5.3)	INTG (4INTG) .	
-6.0000		3 5 -

The diagram illustrates a 4-processor system with a shared bus and a shared cache. The system components and their connections are as follows:

- Processors:** Four processors are shown at the top, labeled T, Z, Y, and X from left to right. Each processor has a local cache controller (R↑) and a local cache memory (R↓).
- Shared Bus:** A central horizontal bus connects the processors to the shared cache.
- Shared Cache:** The cache is divided into four sections, each corresponding to a processor:
 - Section X:** Contains a cache controller (R↑) and a cache memory (R↓).
 - Section Y:** Contains a cache controller (R↑) and a cache memory (R↓).
 - Section Z:** Contains a cache controller (R↑) and a cache memory (R↓).
 - Section T:** Contains a cache controller (R↑) and a cache memory (R↓).
- Multiplexer (M):** A multiplexer is located at the bottom of the cache, connected to the bus. It has four inputs, each controlled by a processor's cache controller (R↑).
- Cache Memory (R↓):** Each section of the cache has a memory unit (R↓) that stores data. The memory units are connected to the bus via the multiplexer.

.RPN

ALG

T- Z- Y- X-

.RPN ALG

RPN ALG

(6) " ") . .1

• **100%** /

$x \leftrightarrow y$: .2

$$x \blacktriangleleft \blacktriangleright y$$

—

EQN : 3

$$\left(\begin{array}{c} \downarrow \\ \uparrow \end{array} \right)$$

(

4.   () :



□

□

$$x^iy : \quad /$$

.1

 2

.3

 $x+yi :$ /

. .1

 .2

.3

. .4

$$F((\cdot))$$

1. r. قيمة أدخل

2. ؟؟؟ على إضبط

3. θ قيمة أدخل

□

.1

```

                .z                .2
                . [ENTER]         .3
2              .                .4
                . [MODE]
:
                . z1              .1
                .                .2
                .z2              .3
                . [ENTER]         .4
2              .                .5
                . [MODE]
:
:
:

```

$$\sin(2+3i)$$

```

:           :           :
[2nd] [F5] [9] (9xix)
.
SIN(2+3i)   [SIN] [2] [+] [3] [i]
9.1545      [ENTER]
i-4.1689   9.1545i-4.1689

```

$$z_1 \div (z_2 + z_3)$$

$$z_3 = 4 - 3i \quad z_2 = -2 + i \quad z_1 = 23 + 13i$$

:	:	:
		$\boxed{\leftarrow}$ $\boxed{\text{DISPLAY}}$ $\boxed{\cdot}$ $\boxed{1}$ $(10x+yi)$
	$\boxed{\leftarrow} i \div (-2+i+4-3i)$	$\boxed{()}\boxed{2}\boxed{3}\boxed{+}\boxed{1}\boxed{3}\boxed{i}$ $\boxed{>}\boxed{\div}\boxed{()}\boxed{\div}\boxed{2}\boxed{+}$ $\boxed{i}\boxed{+}\boxed{4}\boxed{-}\boxed{3}\boxed{i}$ $\boxed{\text{ENTER}}$
2.5000 + 9.0000 i	$(23+13i) \div (-2+...$ $2.5000+9.0000i$	

$$(4 - 2/5 i) \times (3 - 2/3 i) :$$

:	:	:
	$\boxed{\leftarrow} 5i) \times (3 - 2/3 i)$	$\boxed{()}\boxed{4}\boxed{-}\boxed{\cdot}\boxed{2}\boxed{\cdot}\boxed{5}$ $\boxed{i}\boxed{>}\boxed{\times}\boxed{()}\boxed{3}\boxed{-}\boxed{\cdot}$ $\boxed{2}\boxed{\cdot}\boxed{3}\boxed{i}$ $\boxed{\text{ENTER}}$
11.7333 i-3.8667	$(4 - 2/5 i) \times (3...$ $11.7333i-3.8667$	

16 8,2 /

$$12F_{16} + E9A_{16} = ?$$

:	:	:
		$\boxed{\text{BASE}}\boxed{2}\boxed{(2\text{HEX})}$
HEX	/	
.16		
	$12Fh+E9Ah$ $FC9h$	$\boxed{1}\boxed{2}\boxed{\text{RCL}}\boxed{F}\boxed{\text{BASE}}$ $\boxed{6}\boxed{(6h)}\boxed{+}\boxed{\text{RCL}}\boxed{E}\boxed{9}$ $\boxed{\text{RCL}}\boxed{A}\boxed{\text{BASE}}\boxed{6}\boxed{(6h)}$ $\boxed{\text{ENTER}}$

$$7760_8 - 4326_8 = ?$$

.8 / **OCT** 12Fh+E9Ah 7711o ▢ BASE 3 (3OCT)

7760o-4326o 7760 ▢ BASE 7 (7o)
3432o - 4326 ▢
BASE 7 (7o) ENTER

$$100_8 \div 5_8 = ?$$

100o÷5o 100 ▢ BASE 7 (7o)
14o ÷ 5 ▢ BASE 7 (7o) ENTER

$$5A0_{16} + 10011000_2 = ?$$

.16 **HEX** 5A0h+ ▢ BASE 2 (2HEX)
5 RCL A 0 ▢ BASE 6 (6h) +
←A0h+10011000b 1001100
0 ▢ BASE 8 (8b) ENTER
5A0h+10011000b
638h
5A0h+b10011000b ▢ BASE 1 (1DEC)
1,592.0000

(x ENTER y x x↔y y) (x, y) ,ALG ,
.X x Y y
/ ▢ CLEAR 4 (4Σ) .1
x↔y y .2
Σ+ x .3
/ ,n .4
n .y x .5

$\left[\leftarrow \right] \left[\Sigma^- \right]$,
) 1 ,
 , .2 n (,
 .2 n=0

:

, y,x

y,x	y,x
20, 5	20, 4
40, 6	400, 6

: : :
 / $\left[\rightarrow \right] \left[\text{CLEAR} \right] \left[4 \right] (4\Sigma)$
 .
 20 Σ^+ $\left[4 \right] \left[x \leftrightarrow y \right] \left[2 \right] \left[0 \right] \left[\Sigma^+ \right]$
 1.0000
 ,n 400 Σ^+ $\left[6 \right] \left[x \leftrightarrow y \right] \left[4 \right] \left[0 \right] \left[0 \right] \left[\Sigma^+ \right]$
 2.0000
 .
 x LASTx $\left[\rightarrow \right] \left[\text{LASTx} \right]$
 400.0000
 400 Σ^- $\left[\leftarrow \right] \left[\Sigma^- \right]$
 1.0000
 40 Σ^+ $\left[6 \right] \left[x \leftrightarrow y \right] \left[4 \right] \left[0 \right] \left[\Sigma^+ \right]$
 2.0000
 20 Σ^- $\left[4 \right] \left[x \leftrightarrow y \right] \left[2 \right] \left[0 \right] \left[\leftarrow \right] \left[\Sigma^- \right]$
 1.0000
 20 Σ^+ $\left[5 \right] \left[x \leftrightarrow y \right] \left[2 \right] \left[0 \right] \left[\Sigma^+ \right]$
 2.0000

/

, (/) L.R. /
 . y,x /

ENTER , (x) y , (y) x ■
 . (L.R. > ($\hat{x}$)) L.R. ($\hat{x}$)
 L.R. , ■
 . (b) (m) (r)

D

.7

SOLVE

SOLVE

SOLVE

SOLVE

$$f(x)$$
 $f(x)$

SOLVE $\cdot(x$

/

 $f(x)$

,X

 $f(x)$

SOLVE

,

 $f(x)$

■

X

/

■

,

/

,

SOLVE

,

SOLVE

•

⋮

()

 $f(x)$

.(,a)

X

$$\cdot (\quad b \quad) x \quad /$$
 $f(x)$
$$\cdot (\quad , c \quad)$$

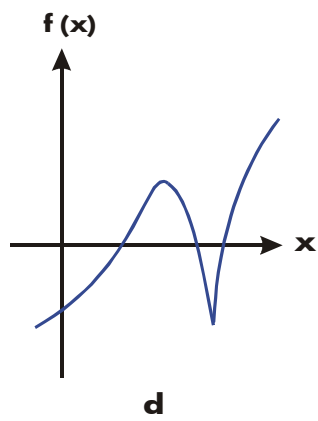
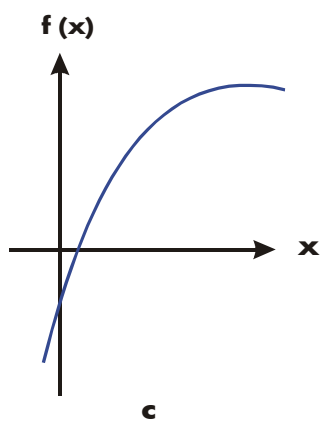
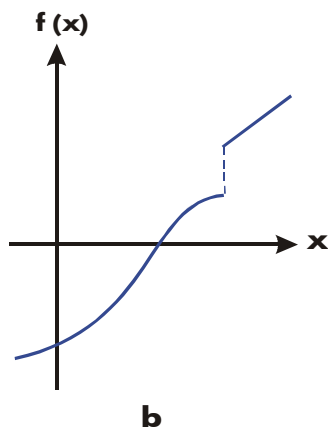
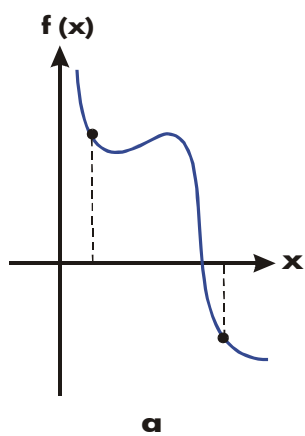
•

 $f(x)$ $f(x)$

,

 $f(x)$

.(,d)



Function Whose Roots Can Be Found

" "

.

,

, $f(x) = 0$

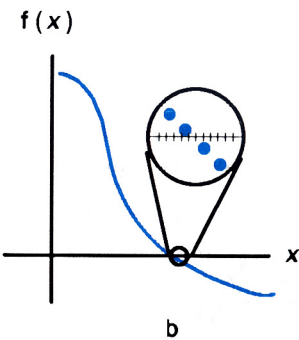
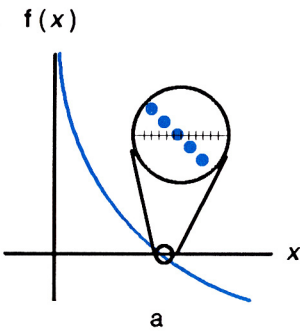
.(12)

SOLVE

12 $f(x)$ $f(x)$

(a) (b) x

$(0, -10-499)$ $(0, 10-499)$ $f(x)$



(x) $\boxed{R\downarrow}$ $f(x)$ $\boxed{R\downarrow}$ $f(x)$ $\checkmark$

$f(x)$ z $f(x)$ y

$f(x)$ $f(x)$ $f(x)$

$$-2x^3 + 4x^2 - 6x + 8 = 0$$

:	:	:
.	.	EQN
.	.	+/- 2 x
.	.	RCL X y ^x 3
.	.	+ 4 x
.	.	RCL X y ^x 2
-2xX^3+4xX^2-6➡		- 6 x RCL X
CK=B9AD		+ 8 ENTER
LN=18		SHOW
.	.	C

:	:	:
.	.	10_
.	.	0 STO X
.	.	ENTER 1 0
-2xX^3+4xX^2-6➡		EQN

,X	SOLVING	SOLVE X
	X=	
	1.6506	

1.6506	R↓
--------	----

f(x)	-4.0000E-11	R↓
------	-------------	----



$$x^2 + x - 6 = 0.$$

EQN

RCL

X

y^x

2

+

RCL

X

-

6

ENTER

↩

SHOW

C

X^2+X-6

CK=3971

LN=7

10

0

↩

STO

X

ENTER

1

0

X^2+X-6

EQN

SOLVING

↩

SOLVE

X

X=

2.0000

2.0000

R↓

f(x) = 0.

0.0000000000

R↓

↩

SHOW

0

↩

STO

X

ENTER

1

0

±/∓

X^2+X-6

EQN

SOLVING

↩

SOLVE

X

X=

-3.0000

-3.0000

R↓

f(x) = 0.

0.0000000000

R↓

R↓

↩

SHOW

SOLVE

,x

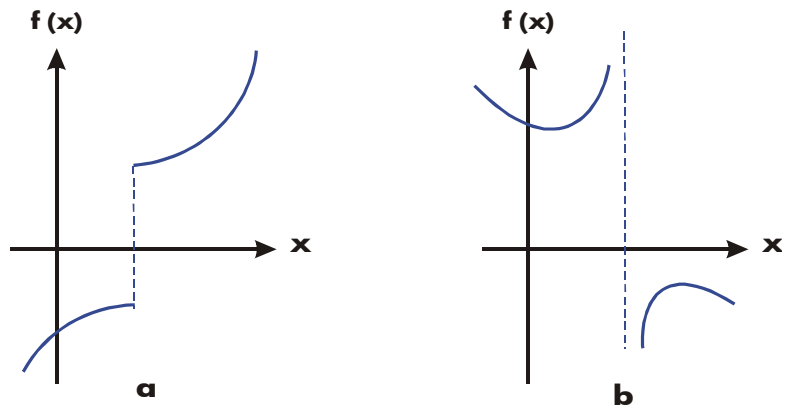
f(x)

.(

,a

)

),
 SOLVE
 $f(x)$
 12
 x
 x
 $f(x)$
 b
 $/$



Special Case: A Discontinuity and a Pole

:

:

:

$$IP(x) = 1.5$$

:

:

:

EQN

INTG 6 (6IP)
 RCL X > =
 1 . 5 ENTER
 SHOW
 C

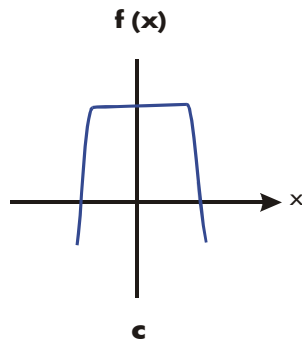
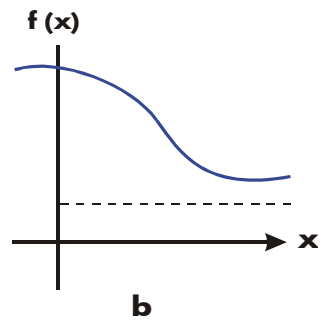
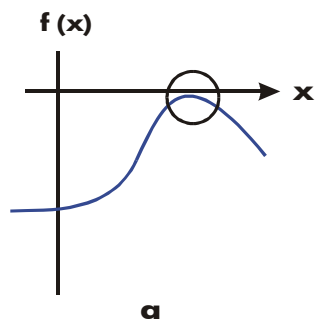
IP(X)=1.5
 CK=D2C1
 LN=9


```

: NO ROOT FND
                                .
                                SOLVE

                                .(      ,a      )
                                -
f(x)                                SOLVE
                                .(      ,b      ) x
                                "      /      "
                                .(      ,c      )
.SOLVE
                                ,

```

Case Where No Root Is Found

$$x^2 - 6x + 13 = 0.$$

$$x = 3$$

EQN

$$X^2 - 6X + 13$$

CK=EC74

LN=10

RCL X y^x 2
 - 6 X RCL X
 + 1 3 ENTER

SHOW

C

```

:
:
:
10_
X^2-6X+13
EQN

```

```

NO ROOT FND
SOLVE X
.10 0

```

$$10 - \frac{1}{X} = 0$$

```

:
:
:
EQN
10-INV(X)
CK=6EAB
LN=9
C
5_
10-INV(X)
EQN

```

```

x
.5 0.005
X=
0.1000
0.1000
R↓
f(x) = 0 0.000000000000
R↓ SHOW

```

```

:
:
:
-1.0000 [+/-] 1 [RCL] [STO] [X]
[ENTER]
10-INV(X) [+/-] 2 [EQN]

.X          X= [RCL] [SOLVE] [X]
          0.1000

```

$$\sqrt{[x \div (x + 0.3)]} - 0.5 = 0$$

```

:
:
:
[EQN]
[√x] [RCL] [X] [÷] [()]
[RCL] [X] [+] [·] [3]
[>] [>] [-] [·] [5]
[ENTER]
[←] [SHOW]
[←]

```

SQR(X÷(X+0.3)) →
 CK=9F3B
 LN=19

```

:
:
:
10 [RCL] [STO] [X]
[ENTER] 1 0
SQR(X÷(X+0.3)) → [EQN]

```

```

:
:
:
X= [RCL] [SOLVE] [X]
0.1000
.10 0

```

X

.-10 0

/

-0,3 0

•

□ □

□
□

—

-10_

$$\text{SQRT}(X \div (X + 0.3)) \rightarrow$$

0  STO X
ENTER +/- 1 0
EQN

 $\cdot f(x)$

NO ROOT FND



1

1

1

—

 $x < -1$
$$f(x) = x + 2$$

/

$$-1 \leq x \leq 1$$
$$f(x) = 1$$

if $x > 1$

$$f(x) = -x + 2$$

•

,RPN

```

J001 LBL J
      J002 1
      J003 2
J004 RCL+ X
      J005 x<y?
      J006 RTN
      J007 4
      J008 -
      J009 +/-
J010 x>y?
      J011 R↓
      J012 RTN

```

9412 39

```

      .-10-8  10-8
      :
      :
      :
      (RPN )
      .
      -1E-8_ [+/-] [R] [STO] [X] [1]
      [+/-] [E] [8] [+/-]
      "J"      -1.0000E-8      [C] [FN=] [J]
      .X      X=      [R] [SOLVE] [X]
      .      -2.0000

```

```

      ( 12)
      .
      SOLVE

```

$$[(|x| + 1) + 10^{15}]^2 - 10^{30} = 0$$

```

SOLVE      ,2  1      .      f(x)
      .
      1.0000

```

```

      .
      SOLVE

```

$$|x^2 - 7| = 0$$

$$\sqrt{7} \quad 12 \quad , \sqrt{7}$$

```

SOLVE      /      ,      .

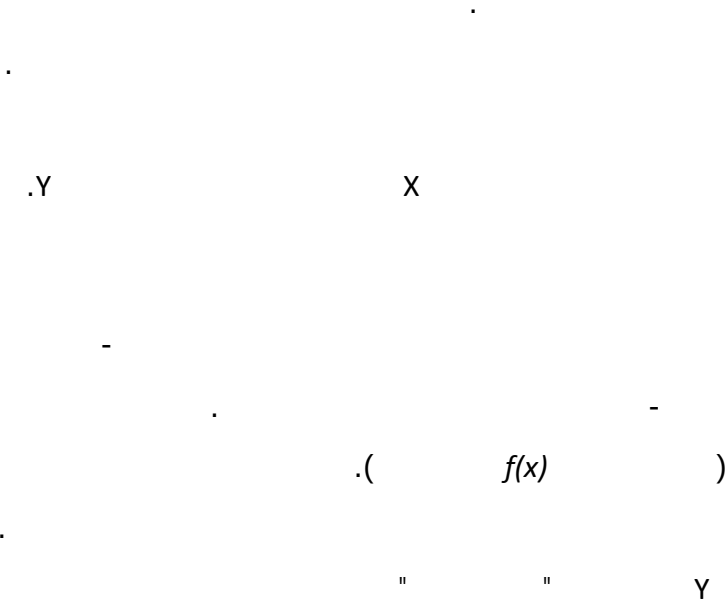
```

. NO ROOT FND

E

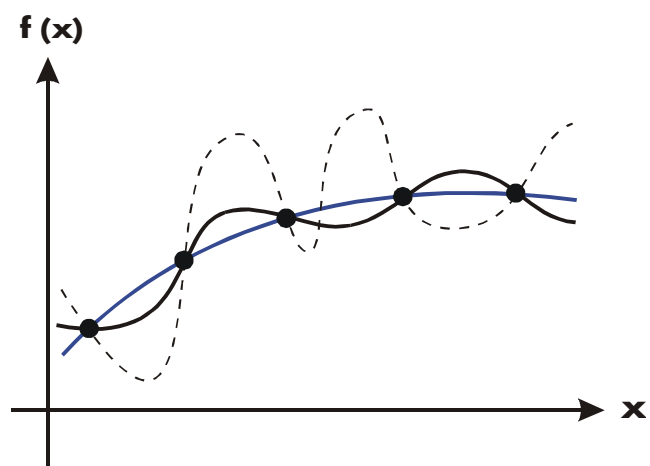
.8

$$\begin{aligned} & f(x) \quad \int f(x) dx \\ & \quad \quad \quad (\quad) x \\ & \quad \quad \quad : \quad , \\ & \quad \quad \quad f(x) \quad . \\ & \quad \quad \quad - f(x) \quad - \\ & \quad \quad \quad . \\ & \quad \quad \quad . \\ & \quad \quad \quad f(x) \\ & \quad \quad \quad (\quad) \quad f(x) \\ & \quad \quad \quad . \\ & \quad \quad \quad f(x) \end{aligned}$$



HP 35s

$$\frac{f(x)}{f(x)}$$



$$f(x)$$

/

$$\int_0^{\infty} x e^{-x} dx.$$

10499

$$f(x) = xe^{-x}$$

```

:
/
EQN
.
X*EXP(
RCL X X [ ] e^x
.
X*EXP(-X)
+/- RCL X ENTER
.
CK=2FE6
LN=9
[ ] SHOW
[ ] C

```

SCI 3

10499

```

:
:
:
1E499_
[ ] DISPLAY 2 (2SCI)
3 ENTER 1 E 4
9 9
EQN
X*EXP(-X)

```

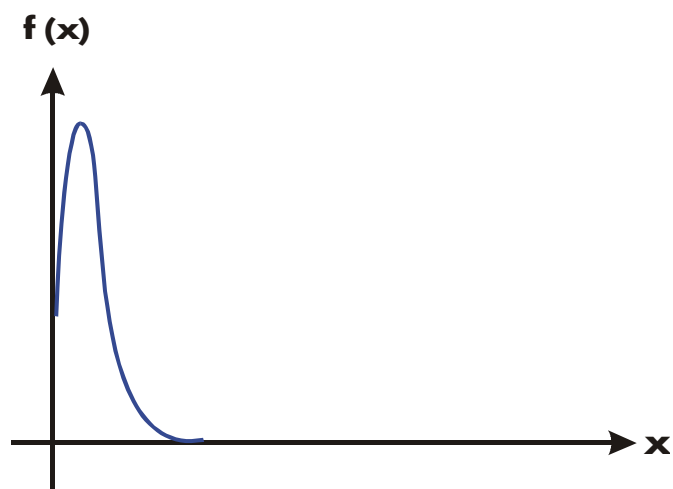


```

INTEGRATING
= ∫
0.000E0
[ ] [ ] X

```

∞ $f(x) = xe^{-x}$ ∞ $.1$
 10499 $f(x)$ 10499 $.1$



$f(x)$
 .
 .
 ALL SCI 11 /
) . /
 .(" "

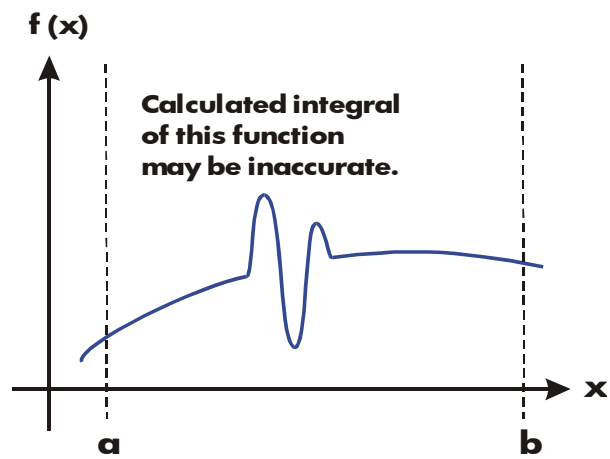
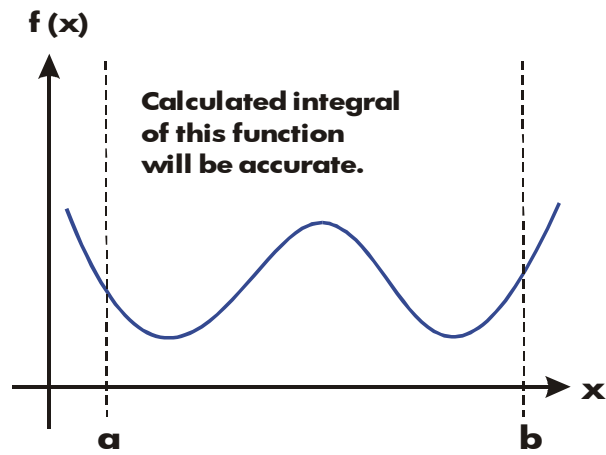
(/)

$f(x)$

.()

:

.



∞
 x

$f(x) = xe^{-x}$

∞

x

$.103$

10499

$:$

$:$

$:$

$1E3$

0

ENTER

1

E

3

$/$

$X \times \text{EXP}(-X)$

EQN

INTEGRATING

$= \int$

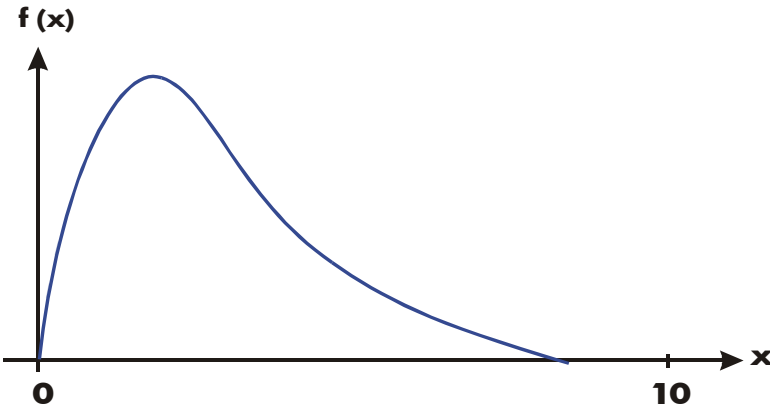
$1.000E0$

$1.000E-3$

$x \leftrightarrow y$

$$x = 10^3 \quad x = 0$$

$$:x = 10 \quad x = 0$$



W

x . x " "

·
·
·
·
() /

F

()

.	()	
.	,	▲
.	/	← C
.	/	,
	(FN=label) /	FN ACTIVE]
.		
	(∫ FN d variable)	FN] <]
.		
		< SOLVE >]
.		
.	( MEM 1 (1VAR)) /	ALL VARS=0
SOLVING	()	BAD GUESS
.		
.		CALCULATING
.	/	CLR ALL? Y N
)	/	CLR EQN? Y N
.(		
)	/	CLR PGMS? Y N
.(		
 %CHG)		DIVIDE BY 0
.(	Y	

.	/	DUPLICAT.LBL
,	" "	EQN LIST TOP
" "	EQN LIST TOP	
.		
.		INTEGRATING
∫ FN	SOLVE CALCULATE /	INTERRUPTED
.PGM	EQN RPN ALG ,	R/S C
	:	INVALID DATA
.		■
$r > n$		■
$n \geq 10^{16}$	, n r	
.		■
n	/	■
.n	/	
	/	■
	x↔y	
.		■
:		■
90	x TAN	■
$x > 1$ $x < -1$	ASIN ACOS	■
$x \geq 1$ $x \leq -1$	HYP ATAN	■
$x < 1$	HYP ACOS	■
.		INVALID VAR
x	gamma factorial	INVALID x!

	:	/	INVALID yx
.	0 th ()	0	■
.	/		■
.	(0 + i 0)		■
.	((I))		INVALID (I)
.	((J))		INVALID (J)
.	(0 + i 0)		LOG(0)
.			LOG(NEG)
.	(B-3)	/	MEMORY CLEAR
.	(B)		MEMORY FULL
.	)		NO
.	(		
.	()	/	NONEXISTENT
.	NONEXISTENT	.FN XEQ , GTO	
.	/ ()		■
.	/		■
.	/ (MEM 2 (2PGM))	/	NO LABELS
.	/		NO SOLUTION
.	/		MULT SOLUTION
.	(PGM EQN /)	SOLVE	NO ROOT FND
:	(D-8)		
.	,	/	
.	,	SOLVE	
.	(SOLVE)		

.	, ()	OVERFLOW
.	$\pm 9.999999999999999E499$	
.(17-1	" / ")	
,5	.6 /	
.	.	
,	" "	PRGM TOP
.	" "	PRGM TOP
.(fFN SOLVE	)	RUNNING B
$\int$ FN d <i>variable</i>	SOLVE <i>variable</i> ()	SELECT FN
.	/	
,MEMORY CLEAR	fFN SOLVE	
.	.	
(FN= <i>label</i>)	/	SOLVE ACTIVE
.	SOLVE	
SOLVE		SOLVE(SOLVE)
.	.	
SOLVE		FN) f SOLVE<
.	.	
.		SOLVING
.	.	
.		SQRT(NEG)

: STAT ERROR

.n = 0 ■
n = b r m $\hat{y}$ $\hat{x}$ s_y s_x ■
y) x $\bar{x}w$ $\hat{x}$ r ■
.(
x b m r $\hat{y}$ $\hat{x}$ ■
SOLVE ,
/ C ← . /

SYNTAX ERROR

.BIN OCT ,HEX / TOO BIG

$-34,359,738,368 \leq n \leq 34,359,738,367$

) 21st XEQ / XEQ OVERFLOW
, ∫ FN SOLVE .(20

) YES

.(

:

35S-OK

35S-FAIL n

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G

/

.  **DISPLAY** **1** (1FIX) n

FIX n



/

 $(\rightarrow \text{DEG})$

*

*				
1	15-1	Changes the sign of a number.	.	+/-
1	19-1	Addition. Returns $y + x$.	$y + x$	+
1	19-1	Subtraction. Returns $y - x$.	$y - x$	-
1	19-1	Multiplication. Returns $y \times x$.	$y \times x$	$\times$
1	19-1	Division. Returns $y \div x$.	$y \div x$	$\div$
1	16-6	Power. Indicates an exponent.	. / .	$\wedge$
	4-1	Deletes the last digit keyed in; clears x ; clears a menu; erases last function keyed in an equation; deletes an equation; deletes a program step.		
	8-1		/ x /	
	3-6			
	7-13		.	
	28-1	Displays previous entry in catalog; moves to previous equation in equation list; moves program pointer to previous step.		
	3-6		. /	
	11-13		.	
	20-13		.	
	28-1	Displays next entry in catalog; moves to next equation in equation list; moves program pointer to next line (during program entry); executes the current program line (not during program entry).		
	3-6		. /	
	11-13		() .	
	20-13		() .(	

*				
	14-1	Moves the cursor and does not delete any content.	.	 or 
	11-1 4-6 8-11	Scrolls the display to show more digits to the left and right; displays the rest of an equation or binary number; goes the next menu page in the CONST and SUMS menus.	. . .SUMS CONST	  or  
	3-6	Goes to the top line of the equation or the first line of the last label in program mode.	/	 
	3-6	Goes to the last line of the equation or the first line of the next label in program mode.	/	 
1	5-6	  Separates the two or three arguments of a function.	 	,
1	18-1	 Reciprocal.	. / 	1/x
1	2-4	 Common exponential. Returns 10 raised to the x power.	10 . /  .x ()	10 ^x
1	6-4	 Percent. Returns (y × x) ÷ 100.	.  . (y × x) ÷ 100	%
1	6-4	  Percent change. Returns (x – y)(100 ÷ y).	.   . (x – y)(100 ÷ y)	%CHG
1	3-4	  Returns the approximation 3.14159265359 (12 digits).	. (12) 3.14159265359  	π
Σ +	2-12	 Accumulates (y, x) into statistics registers.	(y, x) /  .	Σ+
Σ –	2-12	  Removes (y, x) from statistics registers.	(y, x)   .	Σ–
1	11-12	   (Σx) Returns the sum of x-values.	   (Σx) .x	Σx
1	11-12	     (Σx ²) Returns the sum of squares of x-values.	.x      (Σx ²)	Σx ²
1	11-12	       (Σxy) Returns the sum of products of x-and y-values.	       (Σxy)	Σxy

*			
1	11-12	(Σy) Returns the sum of y-values.	Σy
1	11-12	(Σy^2) Returns the sum of squares of y-values.	Σy^2
1	7-12	(σx) Returns population standard deviation of x-values: $\sqrt{\sum (x_i - \bar{x})^2 \div n}$	σx
1	7-12	(σy) Returns population standard deviation of y-values: $\sqrt{\sum (y_i - \bar{y})^2 \div n}$	σy
	2-8 7-15	FN d () Integrates the displayed equation or the program selected by FN=, using lower limit of the variable of integration in the Y-register and upper limit of the variable of integration in the X-register.	variable () FN= Y X
1	6-6	parenthesis. press to leave the parenthesis for further calculation.	parenthesis ()
1	1-10	: A vector symbol for performing vector operations	:
1	1-9	: A complex number symbol for performing complex number operations	:
1	4-6	variable Value of named variable.	variable() A through Z
1	17-4	ABS Absolute value. |x| Returns	ABS ABS
1	4-4	ACOS Arc cosine. Returns $\cos^{-1}x$.	ACOS ACOS $\cos^{-1}x$
1	6-4	HYP ACOS Hyperbolic arc cosine. Returns $\cosh^{-1} x$.	HYP ACOS ACOSH $\cosh^{-1} x$
	9-1	Activates Algebraic mode.	/ MODE (4R)

*				
1	4-5	Denominator. Sets denominator limit for displayed fractions to x. If x = 1, displays current /c value.	/ Denominator. . /c x = 1 .	/c
	14-4	Converts ° F to ° C.	.° C ° F	→°C
	12-14	2 (2CF) n Clears flag n (n = 0 through 11).	2 (2CF) n 0 n)n / . (11	CF n
	5-1 28-1	Displays menu to clear numbers or parts of memory; clears indicated variable or program from a MEM catalog; clears displayed equation;	/ . / / / . MEM .	CLEAR
	29-1	Clears all stored data, equations, and programs.	/ .	3 (3ALL)
	23-13	Clears all programs (calculator in Program mode).	) / .(/	3 (3PGM)
1	7-13	Clears the displayed equation (calculator in Equation mode).	/ /) (	3 (3EQN)
	1-12	4 (4Σ) Clears statistics registers.	/ 4 (4Σ) .	CLΣ
	6-3	2 (2VARS) Clears all variables to zero.	2 (2VARS) / .	CLVARS
	3-2 7-2 7-13	1 (1X) Clears x (the X-register) to zero.	x / 1 (1X) .(X)	CLx
	4-1	6 (6CLVARx) Clears indirect variables whose address is greater than the x address to zero.	6 (6CLVARx) / x .	CLVARx
	7-2	5 (5STK) Clears all stack levels to zero.	5 (5STK) / .	CLSTK
	14-4	Converts inches to centimeters.		→CM

*				
1	15-4	nCr <i>Combinations of n items taken r at a time. Returns $n! \div (r! (n - r)!)$.</i>	n r $n! \div (r! (n - r)!)$	nCr
1	3-4	COS <i>Cosine. Returns cos x.</i>	COS <i>Cosine</i> cos x	COS
1	6-4	HYP COS <i>Hyperbolic cosine. Returns cosh x.</i>	HYP COS <i>Hyperbolic cosine</i> cosh x	COSH
	8-4	Accesses the 41 physics constants.	.41	CONST
1	1-11	BASE 5 (5d) indicates a decimal number	BASE 5 (5d) .	d
	1-11	BASE 1 (1DEC) Selects Decimal mode.	BASE 1 (1DEC) ./	DEC
	4-4	MODE 1 (1DEG) Selects Degrees angular mode.	BASE 1 (1DEC) ./	DEG
1	13-4	DEG R <i>Radians to degrees. Returns $(360/2\pi) x$.</i>	Radians . $(360/2\pi) x$ degrees	DEG
	21-1	Displays menu to set the display format, radix (· or °), thousand separator, and display format of complex number.	(° ·) .	DISPLAY
	18-14	DSE <i>variable Decrement, Skip if Equal or less. For control number cccccc.fffii stored in a variable, subtracts ii (increment value) from cccccc (counter value) and, if the result $\leq$ fff (final value), skips the next program line.</i>	DSE <i>variable (متغير)</i> . cccccc.fffii () ii () cccccc () $\leq$ fff .	DSE variable
1	15-1	Begins entry of exponents and adds "E" to the number being entered. Indicates that a power of 10 follows.	/	E

*				
1	22-1	DISPLAY 3 (3ENG) <i>n</i> Selects Engineering display with <i>n</i> digits following the first digit (<i>n</i> = 0 through 11).	DISPLAY 3 (3ENG) <i>n</i> 0 <i>n</i>) <i>n</i> . (11	ENG <i>n</i>
	22-1	Causes the exponent display for the number being displayed to change in multiple of 3.	.3 /	ENG and ENG
	19-1 4-6 11-6	Separates two numbers keyed in sequentially; completes equation entry; evaluates the displayed equation (and stores result if appropriate).	) . (	
	6-2	Copies <i>x</i> into the Y-register, lifts <i>y</i> into the Z-register, lifts <i>z</i> into the T-register, and loses <i>t</i> .	<i>y</i> <i>Y</i> <i>x</i> <i>T</i> <i>z</i> <i>Z</i> . <i>t</i>	ENTER
	3-6 7-13	Activates or cancels (toggles) Equation-entry mode.	() /	
	1-4	e^x <i>Natural exponential.</i> Returns <i>e</i> raised to the <i>x</i> power.	. / / e^x <i>e</i> . <i>x</i> ()	E ^{<i>x</i>}
	1	16-6	e^x <i>Natural exponential.</i> Returns <i>e</i> raised to the specified power.	EXP
1	14-4	°F Converts °C to °F.	. °F °C °F	→ °F
	1-5	Turns on and off Fraction-display mode.	/	FDISP
	21-1	DISPLAY 1 (1FIX) <i>n</i> Selects Fixed display with <i>n</i> decimal places: 0 ≤ <i>n</i> ≤ 11.	DISPLAY 1 (1FIX) <i>n</i> <i>n</i> 0 ≤ <i>n</i> ≤ 11 :	FIX <i>n</i>
	12-14	Displays the menu to set, clear, and test flags.	. /	FLAGS
	1-15 7-15	FN= <i>label</i> Selects <i>labeled</i> program as the current function (used by SOLVE FN). $\int$ and	. / FN= /) ($\int$ FN SOLVE	FN = <i>label</i>
	1	INTG 5 (5FP) <i>Fractional part of x.</i>	INTG 5 (5FP) . <i>x</i>	FP
		Error! Reference source not		

*			
1	4found. 17- 12-14	 FLAGS 3 (3FS?) <i>n</i> If flag <i>n</i> (<i>n</i> = 0 through 11) is set, executes the next program line; if flag <i>n</i> is clear, skips the next program line.	 FLAGS 3 (3FS?) <i>n</i> (11 0 <i>n</i>) <i>n</i> <i>n</i>
	14-4	  gal Converts liters to gallons.	  gal
	4-4	MODE 3 (3GRD) Sets Grads angular mode.	MODE 3 (3GRD) .Grads
	21-13	Sets program pointer to line <i>nnn</i> of program <i>label</i> .	<i>nnn</i> /   <i>label</i> <i>nnn</i>
	21-13	Sets program pointer to PRGM TOP.	PRGM /    .TOP
	1-11	 BASE 6 (6h) Indicates a hexadecimal number	 BASE 6 (6h) .
	1-11	 BASE 2 (2HEX) Selects Hexadecimal (base 16) mode.	 BASE 2 (2HEX)) / . (16
	6-4	Displays the HYP_ prefix for hyperbolic functions.	HYP_ .
			 HYP
1	13-4	  HMS <i>Hours to hours, minutes, seconds.</i> Converts <i>x</i> from a decimal fraction to hours–minutes–seconds format.	  HMS →HMS <i>x</i> . - / .
1	13-4	 HMS  <i>Hours, minutes, seconds to hours.</i> Converts <i>x</i> from hours–minutes–seconds format to a decimal fraction.	 HMS  HMS→ <i>x</i> . - - .
1	2-9	Used for entering complex numbers	
1	4-6 21-14	RCL (I) / (J) , STO (I) / (J) . Value of variable whose letter corresponds to the numeric value stored in variable I/J.	RCL (I) / (J) , STO (I) / (J) (I)/(J) / .J/I
1	14-4	  in Converts centimeters to inches.	  in →IN

*			
1	16-6	INTG 2 (2INT÷) Produces the quotient of a division operation involving two integers.	INTG 2 (2INT÷) IDIV
1	2-4	INTG 2 (2INT÷) Produces the quotient of a division operation involving two integers.	INTG 2 (2INT÷) INT÷
1	18-4	INTG 4 (4INTG) Obtains the greatest integer equal to or less than given number.	INTG 4 (4INTG) INTG
	13-13	INPUT <i>variable</i> Recalls the <i>variable</i> to the X-register, displays the variable's name and value, and halts program execution. Pressing R/S (to resume program execution) or (to execute the current program line) stores your input in the variable. (Used only in programs.)	INPUT <i>variable</i> () X R/S () () .()

*			
1	16-6	Reciprocal of argument.	. / INV
1	17-4	INTG 6 (6IP) Integer part of x.	. INTG 6 (6IP) IP x.
	18-14	ISG <i>variable</i> Increment, Skip if Greater. For control number cccccc.fffii stored in variable, adds ii	ISG ISG <i>variable</i> . ccccccc.fffii

		(increment value) to cccccc (counter value) and, if the result > fff (final value), skips the next program line.	) cccccc () ii) > fff () . ()	
1	14-4	Converts pounds to kilograms.	→KG .	
1	14-4	Converts miles to kilometers	→KM .	
1	14-4	Converts gallons to liters.	→L .	
	8-2	LASTx Returns number stored in the LAST X register.	LASTx .X	
1	14-4	Converts kilograms to pounds.	→LB .	
	3-13	LBL label Labels a program with a single letter for reference by the XEQ, GTO, or FN= operations. (Used only in programs.)	LBL label (/) LBL label / XEQ . FN= operations() GTO .()	
1	1-4	LN Natural logarithm. Returns log _e x.	/ LN .log _e x	
1	1-4	LOG Common logarithm. Returns log ₁₀ x.	. LOG .log ₁₀ x	
	4-12	Displays menu for linear regression.	. / L.R.	
1	7-12	(m) Returns the slope of the regression $\frac{(\sum(x_i - \bar{x})^2 \bar{y})}{\sum(x_i - \bar{x})} \div \sum(x_i - \bar{x})(y_i - \bar{y})$ line: $[\sum(x_i - \bar{x})^2 \bar{y}] \div \sum(x_i - \bar{x})(y_i - \bar{y})$	(m) m : $[\sum(x_i - \bar{x})^2 \bar{y}] \div \sum(x_i - \bar{x})(y_i - \bar{y})$	
*				
1	14-4	Converts kilometers to miles.	→MILE .	
	28-1	Displays the amount of available memory and the catalog menu.	. / MEM	
	22-13	Begins catalog of programs.	. / MEM 2 (2PGM)	
	4-3	Begins catalog of variables.	. / MEM 1 (1VAR)	
	7-1	Displays menu to set ALG or RPN mode or angular modes.	MODE	

	4-4		RPN ALG /	
1	11-12	SUMS (n) Returns the number of sets of data points.	SUMS (n)	n
1	4-11	LOGIC 5 (5NAND) Logic operator	LOGIC 5 (5NAND)	NAND
1	4-11	LOGIC 6 (6XOR) Logic operator	LOGIC 6 (6XOR)	NOR
1	4-11	LOGIC 4 (4NOT) Logic operator	LOGIC 4 (4NOT)	NOT
1	2-11	BASE 7 (7O) Indicates an octal number	BASE 7 (7O)	o
	1-11	BASE 3 (3OCT) Selects Octal (base 8) mode.	BASE 3 (3OCT)	OCT
1	4-11	LOGIC 3 (3OR) Logic operator	LOGIC 3 (3OR)	OR
	1-1	Turns the calculator off.		OFF
1	15-4	nPr <i>Permutations of n items taken r at a time. Returns $n! \div (n-r)!$.</i>	n $n! \div (n-r)!$	nPr nPr
	6-13	Activates or cancels (toggles) Program-entry mode.	()	PRGM
	18-13 19-13	PSE <i>Pause.</i> Halts program execution briefly to display x, variable, or equation, then resumes. (Used only in programs.)	x .()	PSE

*				
1	7-12	L.R. > > (r) Returns the correlation coefficient between the x- and y-values: $\frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum (x_i - \bar{x})^2 \times \sum (y_i - \bar{y})^2}}$	L.R. > > (r) : y x $\frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum (x_i - \bar{x})^2 \times \sum (y_i - \bar{y})^2}}$	r
	25-1	0000 (0000()) Changes the display of complex numbers.	DISPLAY 1 0 (10r()) من يبدل للأعداد الشاشة على العرض شكل المركبة.	r θ a
	4-4	MODE 1 (1RAD) Selects Radians angular mode.	MODE 1 (1RAD)	RAD

1	13-4	Degrees to radians. Returns $(2\pi/360) x$.	. radians $\rightarrow$ RAD $.(2\pi/360) x$	
	23-1	(6.) Selects the comma as the radix mark (decimal point).	(6.) .()	RADIX ,
	23-1	(5.) Selects the period as the radix mark (decimal point).	(5.) .()	RADIX .
	15-4	Executes the RANDOM function. Returns a random number in the range 0 through 1.	.RANDOM .1 0	RANDOM
	7-3	<i>variable</i> Recall. Copies <i>variable</i> into the X-register.	. / .X	RCL <i>variable</i>
	7-3	<i>variable</i> Returns $x + \text{variable}$.	<i>variable</i> () . + x	RCL+ <i>variable</i>
	7-3	<i>variable</i> . Returns $x - \text{variable}$.	() . - x	RCL- <i>variable</i>
	7-3	<i>variable</i> . Returns $x \times \text{variable}$.	() . $\times x$	RCLx <i>variable</i>
	7-3	<i>variable</i> . Returns $x \div \text{variable}$.	() . $\div x$	RCL $\div$ <i>variable</i>

*				
1	16-6	(3Rmdr) Produces the remainder of a division operation involving two integers.	(3Rmdr) .	RMDR
1	18-4 8-5	Round. Rounds x to n decimal places in FIX n display mode; to $n + 1$ significant digits in SCI n or ENG n display mode; or to decimal number closest to displayed fraction in Fraction-display mode.	$n \quad x \quad \img alt="2nd function key"/> \img alt="RND key"/> Round$ $/$ $n + 1 \quad \text{FIX } n$ $SCI \ n \quad / \quad \text{ENG}$	RND

	9-1	MODE 5 (5RPN) Activates Reverse Polish notation.	MODE 5 (5RPN) RPN	
	4-13 2-14	RTN <i>Return.</i> Marks the end of a program; the program pointer returns to the top or to the calling routine.	RTN <i>Return</i>	RTN
	3-2 Error! Bookmark not defined.	R↓ <i>Roll down.</i> Moves <i>t</i> to the Z-register, <i>z</i> to the Y-register, <i>y</i> to the X-register, and <i>x</i> to the T-register in RPN mode. Displays the X,Y,Z,T menu to review the stack in ALG mode.	R↓ <i>Roll down</i> z Z t x X y Y .RPN / T T Z Y X .ALG /	R↓
	3-2 Error! Bookmark not defined.	R↑ <i>Roll up.</i> Moves <i>t</i> to the X-register, <i>z</i> to the T-register, <i>y</i> to the Z-register, and <i>x</i> to the Y-register in RPN mode. Displays the X,Y,Z,T menu to review the stack in ALG mode.	R↑ <i>Roll up</i> z X t x Z y T .RPN / Y T Z Y X / .ALG	R↑
	4-12	Displays the standard-deviation Menu.		S.σ
	22-1	DISPLAY 2 (2SCI) <i>n</i> Selects Scientific display with <i>n</i> decimal places. (<i>n</i> = 0 through 11.)	DISPLAY 2 (2SCI) <i>n</i> o n) .n . (11	SCI <i>n</i>

*				
	15-4	SEED Restarts the random-number sequence with the seed $|x|$.	SEED	SEED
	12-14	FLAGS 1 (1SF) <i>n</i> Sets flag <i>n</i> (<i>n</i> = 0 through 11).	/ FLAGS 1 (1SF) <i>n</i> .(11 0 n) n /	SF <i>n</i>
1	17-4	INTG 1 (1SGN) Indicates the sign of <i>x</i> .	INTG 1 (1SGN) . x	SGN

	19-6 23-13	Shows the full mantissa (all 12 digits) of x (or the number in the current program line); displays hex checksum and decimal byte length for equations and programs.	x (12) . .	SHOW
1	3-4	Sine. Returns sin x.	. Sine. . sin x	SIN
1	6-4	Hyperbolic sine. Returns sinh x.	Hyperbolic sine .sinh x	SINH
	1-7 1-15	variable Solves the displayed equation or the program selected by FN=, using initial estimates in variable and x.	variable () FN= . x	SOLVE variable
1	14-14	Inserts a blank space character during equation entry.	/	SPACE
1	16-6	Square of argument.	.	SQ
1	16-6	Square root of x.	.x	SQRT
	2-3	variable Store. Copies x into variable.	. variable () . x	STO variable
	6-3	variable Stores variable + x into variable.	variable () x + ()	STO + variable
	6-3	variable Stores variable - x into variable.	variable () . x -	STO - variable
	6-3	variable Stores variable x x into variable.	variable () . x x	STO x variable
*	6-3	variable Stores variable ÷ x into variable.	variable () . x ÷	STO ÷ variable
	19-13	Run/stop. Begins program execution at the current program line; stops a running program and displays the X-register.	. /	STOP
	4-12	Displays the summation menu.	. X	SUMS

1	6-12	  (Σx) Returns sample standard deviation of x-values: $\sqrt{\sum (x_i - \bar{x})^2 \div (n - 1)}$	  (Σx) .x $\sqrt{\sum (x_i - \bar{x})^2 \div (n - 1)}$	sx
1	6-12	   (Σy) Returns sample standard deviation of y-values: $\sqrt{\sum (y_i - \bar{y})^2 \div (n - 1)}$	   (Σy) .y $\sqrt{\sum (y_i - \bar{y})^2 \div (n - 1)}$	sy
1	3-4	 <i>Tangent</i> . Returns tan x.	.tan x / 	TAN
1	6-4	  <i>Hyperbolic tangent</i> . Returns tanh x.	/   .tanh x	TANH
	4-3 15-13	  <i>variable</i> Displays the labeled contents of <i>variable</i> without recalling the value to the stack.	  <i>variable</i> () /	VIEW <i>variable</i>
	12-6	Evaluates the displayed equation.	.	
	1-14	 <i>label</i> Executes the program identified by <i>label</i> .	 <i>label</i> (/) . /	XEQ <i>label</i>
1	2-4	 <i>Square of x</i> .	.x 	x²
1	2-4	 <i>Square root of x</i> .	.x 	x√
1	2-4	 <i>The xth root of y</i> .	.y x th 	$\sqrt[x]{y}$

*				
1	4-12	  () Returns the mean of x values: $\sum x_i \div n.$	  () :x / .Σ x _i ÷ n	$\bar{x}$
1	11-12	  () Given a y-value in the X-register, returns the x-estimate based on = (y - b) ÷ $\hat{x}$ the regression line: m.	  () X y : x = (y - b) ÷ m $\hat{x}$	$\hat{x}$
1	15-4	 <i>Factorial (or gamma)</i> . Returns (x)(x - 1) ... (2)(1), or Γ (x)	(gamma) 	!

		+ 1).	.(x)(x - 1) ... (2)(1), or $\Gamma(x + 1)$	
1	16-6	The argument1 root of argument2.	.2 1 XROOT	
1	4-12	w)Returns (weighted mean of x values: $(\sum y_i x_i) \div \sum y_i$.	w) ($\therefore X$ $(\sum y_i x_i) \div \sum y_i$	w $\bar{X}$
	4-12	Displays the mean (arithmetic average) menu.	) .(	
	8-3	x exchange. Exchanges x with a variable.	.X x<> variable	
	4-2	x exchange y. Moves x to the Y-register and y to the X-register.	.y x x<>y	
	7-14	Displays the "x?y" comparison tests menu.	.X y Y x ."x?y"	
	7-14	(x?y) ($\neq$) If $x \neq y$, executes next program line; if $x = y$, skips next program line.	(x?y) ($\neq$) x $\neq$ y . x=y	x $\neq$ y

*				
	7-14	($\leq$) If $x \leq y$, executes next program line; if $x > y$, skips next program line.	($\leq$) x $\leq$ y . x>y	x $\leq$ y?
	7-14	(<) If $x < y$, executes next program line; if $x \geq y$, skips next program line.	(<) x<y . x $\geq$ y	x<y?
	7-14	(>) If $x > y$, executes next program line; if $x \leq y$, skips next program line.	(>) x>y .	x>y?

			$x < 0$	
	7-14	(=) If $x=0$, executes next program line; if $x \neq 0$, skips next program line:	(=) $x=0$ $x \neq 0$	$x=0?$
1	4-11	(2XOR) Logic operator	(2XOR)	XOR
	11-4	(9 <i>x</i> +i <i>y</i>) Changes display of complex numbers.	(9 <i>x</i> +i <i>y</i>)	$x+iy$
	25-1	(11 <i>x</i> + <i>y</i> i) Changes display of complex numbers. ALG mode only.	(11 <i>x</i> + <i>y</i> i)	$x+yi$
1	4-12	() Returns the mean of y values. $\Sigma y_i \div n$	() $\bar{y}$	$\bar{y}$
1	11-12	() Given an x -value in the X -register, returns the y -estimate $= \hat{y}$ based on the regression line: $m x + b$	() $\hat{y}$ X x $:$ y $= m x + b$	$\hat{y}$
1	2-4	Power. Returns y raised to the x^{th} power.	Power (/) x^{th} / y	y^x

:

.1

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