

Calculation of e

Next...					Init.

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=====
      C A L C U L A T I O N   O F   E
=====
      Calculation of e (2.718281828...)

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$$e = 1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + \frac{1}{4!} + \dots + \frac{1}{n!} + \dots$$

Step	Procedure	Keys	Display
1	Init.	E	2
2	Next...	A	2.---

Repeat n times step 2.
 More larger is n, more the result approaches e

$$e = 1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + \frac{1}{4!} + \dots + \frac{1}{n!} + \dots$$

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// ##### INIT #####
LBL E 01 00 STO 07
LBL TAN 02 STO 08 05 STO 03
LBL GRD 05 STO 09 00 STO 02
LBL DEG 00 STO 04 RCL 08 - 01 = * 05 = + RCL 09 = X/T RCL 07 INV EQ COS
01 07 STO 04
LBL COS 05 - RCL 09 = INV LOG = * CE = * RCL 04 = SUM 02 DSZ 09 DEG
OP 33 RCL 02 OP* 03 DSZ 08 GRD
OP 55 DSZ 07 TAN
CMS OP 59 D' C' D' 01 STO 04

// ##### METHOD 1 #####
LBL A 01 SUM 02 RCL 02 PRT STO 00 SBR X2 01 / RCL 01 = SUM 04 RCL 04 PRT E'
RCL 04 R/S
LBL X2 01 STO 01
LBL SQR RCL 00 PRD 01 DSZ 00 SQR
RTN

// ##### METHOD 2 #####
LBL B STO 00 1/X + 01 = YX RCL 00 = R/S

// ##### TITLE #####
LBL C' OP 00 01 05 OP 01 01 03 02 07 01 05 04 01 02 07 OP 02 01 03 03 07 02
04 03 02 03 01 OP 03 00 00 03 02 02 01 00 00 01 07 OP 04 OP 05 RTN

// ##### EQUAL LINE #####
LBL D' OP 00 06 04 OP 01 06 04 06 04 06 04 06 04 06 04 OP 02 OP 03 OP 04 OP
05 RTN

// ##### DASHED LINE #####
LBL E' OP 00 02 00 OP 01 02 00 02 00 02 00 02 00 02 00 OP 02 OP 03 OP 04 OP
05 RTN

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L A B E L S
001 15 E
007 30 TAN
015 80 GRD
023 60 DEG
050 39 COS
095 11 A
121 33 X2
126 34 SQR
136 12 B
149 18 C'
196 19 D'
223 10 E'

Adr	Branch.
C'	089 18 C'
COS	043 67 EQ
D'	088 19 D'
D'	090 19 D'
DEG	068 97 DSZ
E'	116 10 E'
GRD	077 97 DSZ
SQR	131 97 DSZ
TAN	082 97 DSZ
X2	104 71 SBR

Reg.	Instr.
00	102 42 STO 127 43 RCL 137 42 STO 144 43 RCL
01	108 43 RCL 123 42 STO 129 49 PRD
02	020 42 STO 066 44 SUM 073 43 RCL 097 44 SUM 099 43 RCL
03	012 42 STO
04	025 42 STO 047 42 STO 063 43 RCL 092 42 STO 111 44 SUM 113 43 RCL 117 43 RCL
07	004 42 STO 040 43 RCL
08	009 42 STO 027 43 RCL
09	017 42 STO 036 43 RCL 053 43 RCL