

TO: ALL LOCATION OFFICES
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FOLLOWING ARE THE INSTRUCTIONS FOR THE LATEST VERSION OF THE CURVE PROGRAM FOR THE HP-48 GX.

You should also receive the following files:

CURVE	The CURVE directory including: The curve program, CURVE 5.0 GX The vertical curve program, VCURVE 1.02 The triangle solution program, TRIANGLE 1.01
CST	The custom menu file used to run these programs.
CURVE.DOC	This file
CURVE.SX	The version of CURVE (4.1 SX) that will run on HP-48SX calculators and the other programs above.
CST.SX	The custom menu file used with CURVE 4.1 SX

BOTH CURVE and CST are ready to be loaded into a HP-48 using KERMIT (see bottom of instructions). To use the SX version, rename the files CURVE.SX and CST.SX to CURVE. & CST. and upload using ascii instead of binary transfer.

WARNING:

There may be problems with your spiral results if you select chord definition curves. I suggest using the radius value and arc definition curve ignoring the Dc value when using spirals.

CURV 5.00 FOR HP-48 GX

- 1) Execute program (press CURV on menu)
- 2) Displays setup menu
Press "E<>M" or "PRINT" to toggle values
and press ENTER when desired values are set.

Displays: Solution Type

 Simple Curve
 Sprl-Curve-Sprl
 Connecting Sprl
 Fit Curve

Move the highlighted bar with the up & down arrow keys to the type of solution you wish to perform and press ENTER.

- 4) Simple Curve:
Enter delta, Radius, (or Degree of curve if in English units)
then if delta given : Degree of curve, Radius, Length, Chord, External,
Tangent , or Middle ordinate
OR if Radius or Degree of curve given : delta, Length, Chord,
Tangent, Middle ordinate

Spiral-Curve-Spiral:
Enter
Length of spiral in (Ls in)
Radius of curve (Dc)
Ls out
total delta of system
in this order.

Connection Spiral:
Enter Radius of curve going into the spiral (Dc#1)
Radius of curve going out of the spiral (Dc#2)
Length of spiral (Ls) -or- Delta between the tangents

Fit Curve:
Menu Displays: Fit Curve - Angle From

 PI
 a POT

Move highlighted bar to your choice (below) and press ENTER.

- PI : Give delta angle, angle at PI from either tangent to POC,
and distance to POC.
- At POT : Give delta angle, distance to PI from a POT near the PC,
angle at POT from PI to POC, distance to POC from POT.

- 4) Curve (and Spiral if applicable) information will be displayed

press CONT on menu to continue past each screen unless printer is being used (flag 4 was set by the setup routine).

5) Enter station values

Simple Curve : Either PC or PI station

Sprl-Curve-Sprl: Either Beginning of system (TS); or PI station

Connecting Sprl: Either CS or PI station

Fit Curve : Either Setup station; either POT near PC, or PI.

* Enter station values without the "+"

example : 10+20.12 = 1020.12 (english)

10+20.123 = 1020.123 (metric)

*** If a value is not given for either then no station values or deflections will be computed.

6) Displays

Deflection increment?

Enter distance increment for deflections.

A positive number will give every deflection at that increment along the curve system.

A negative number will give the deflection for the station value equal to the positive value of the number given

example : enter -1000 to get only the deflection for station 10+00

*** No entry will skip the deflection output

7) Deflections will be displayed one at a time (if positive increment given)
(station value , deflection , chord)
OUTPUT FOR DEFLECTIONS:

station		10+50	
deflection	chord from PC, TS or ST	4 15' 12"	22.43
(back defl.)	chord from PT, SC or CS	(12 23' 30")	124.00

* spiral also gives the degree of curve at that station

control points are labled (PC,PT,TS,SC,CS,ST)

At the begining of the curve deflections the
short chord for the entered increment is given

8) Displays Again ?

 YES
 NO

Move highlighted bar to your choice and press ENTER.

ENTER ALL ANGLES IN DD.MMSSss FORMAT !!!

This program is based on formulas found in :
Route Location and Design 5th ED.
By Thomas Hickerson

TO USE FIT CURVE PROCEDURE :

You will be prompted for the type of procedure , either PI or POT .

PI :

This uses an angle measured at the PI from the tangent closest to a point on the curve to the point on the curve.

You will be prompted for the delta angle of the curve , the angle to the POC , and the distance to the POC.

POT :

This uses an angle measured at a point on the tangent from the PI to the POC.

You will be prompted for the delta angle of the curve , the distance to the PI , the angle to the POC , and the distance to the POC.

The program will now display the degree of curve and radius that the information you have given will result in. You now have the option of holding these values or you may enter a new radius (or if english, a degree of curve as a negative value).

At this point the program acts as the same as the simple curve procedure.

TO LOAD YOUR HP-48 FROM THE PC :

- 1) Attach the serial interface cable to the top of the HP-48
- 2) On the HP-48 hit left-shift I/O , then SETUP (top right)
- 3) Make sure the parameters are set as follows:
I/O setup menu
IR/WIRE: wire
ASCII/binary: binary
baud: 9600
parity none 0
checksum type: 3
translate code: 1
then hit left-shift I/O again
- 4) On the PC type KERMIT
(* do this from the directory that the program is stored *)
- 5) On the PC at the prompt KERMIT>
type :
SET PORT 1 (or whichever COMM port your cable is plugged into)
SET BAUD 9600
SEND CURVE
- 6) On the HP-48 press the SERVER menu button (top row ,2nd from the left)
- 7) When this is finished and the prompt Kermit-MS> appears then
type on the PC:
SEND CST

