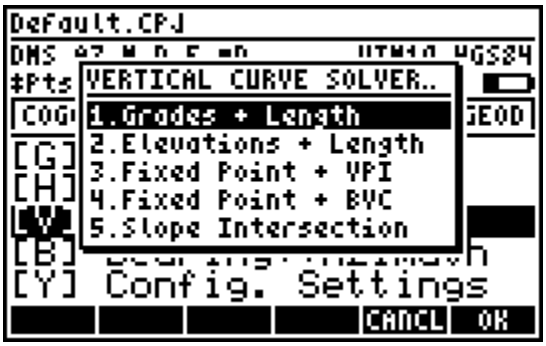
Vertical Curve Solver

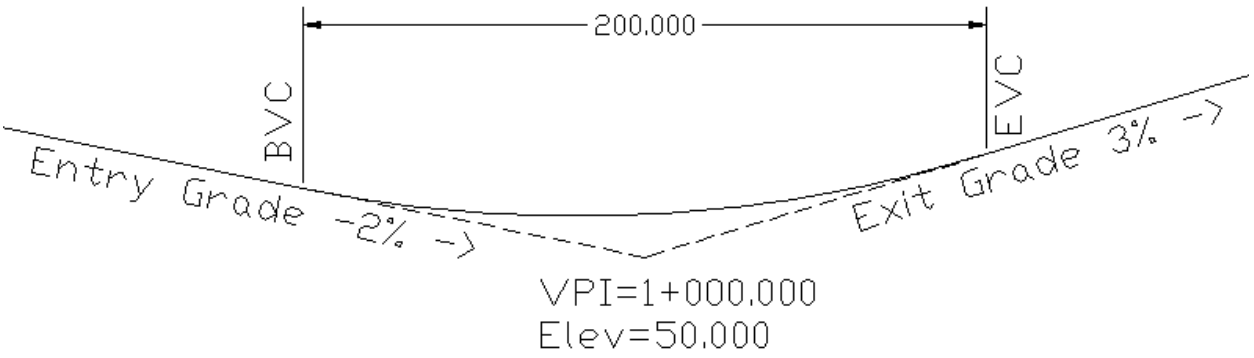
Using COGO+ Pro by Simple Geospatial Solutions

The Vertical Curve Solver program in COGO+ Pro is found in the TOOLS menu. The solver can be used with 5 possible solving scenarios, depending on the type of information known. When the curve is solved it is also possible to calculate elevations for any station on the curve, as well as on tangents outside the curve.

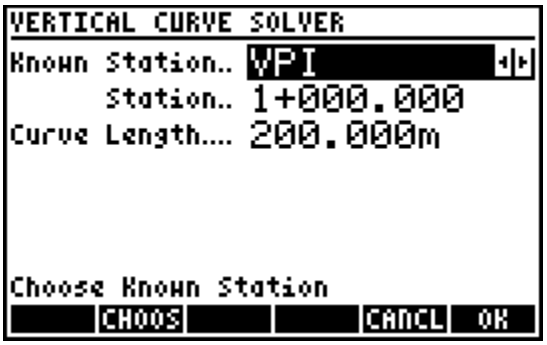


Example 1

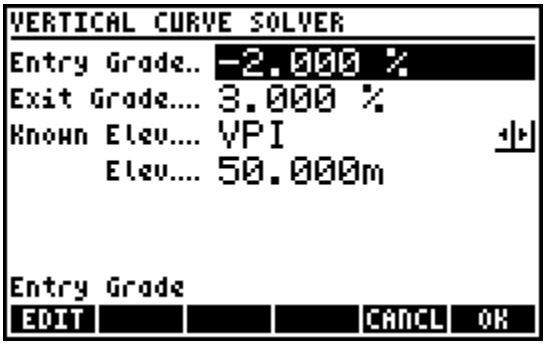
A vertical curve is given with a length of 200m and a known station at the VPI of 1+000 and a known elevation of 50.000, also at the VPI. The entry grade is -2%, exit grade is 3%. Solve the stations and elevations of the BVC and EVC.



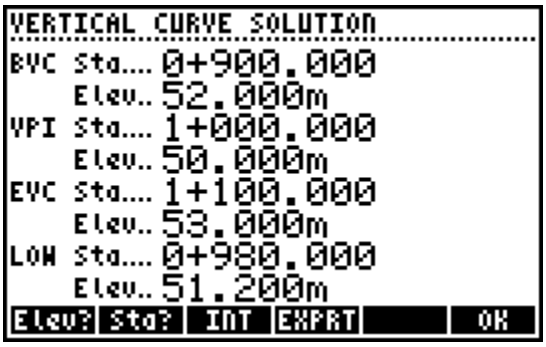
Step 1: Start the Vertical Curve Solver and choose “1.Grades + Length”, then enter the known station and length information.



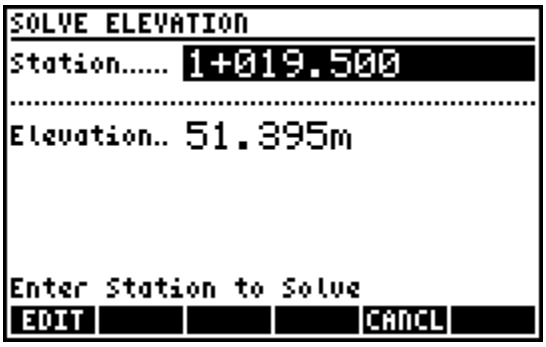
Step 2: Next enter the grade and elevation information.



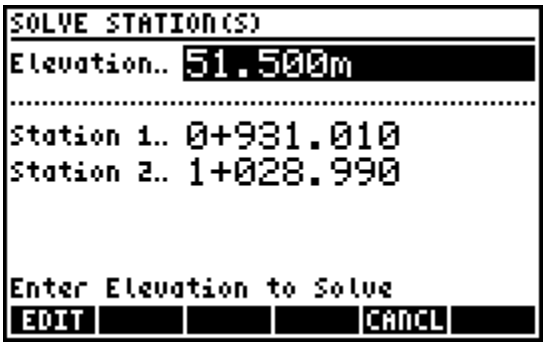
Step 3: The curve solution is displayed, with stations and elevations solved at BVC, VPI, EVC and the High/Low point. Note the softmenu.



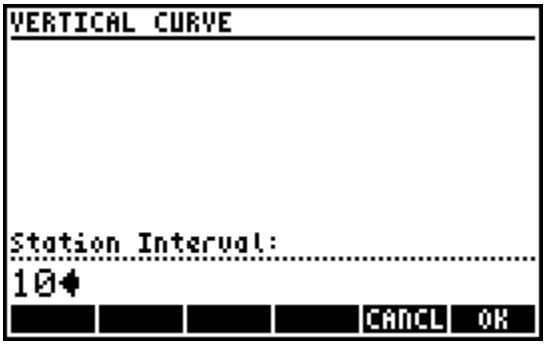
Option 1: Press F1 **[Elev?]** to solve the elevation at any station.

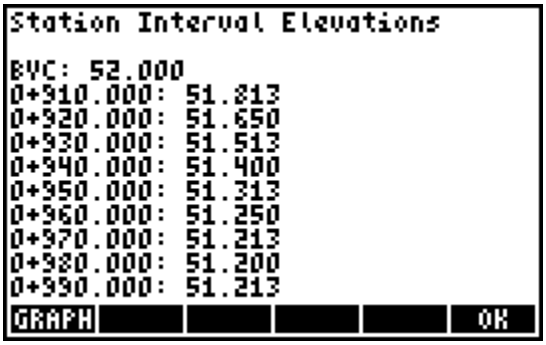


Option 2: Press F2 **[Sta?]** to solve the station with a certain elevation.



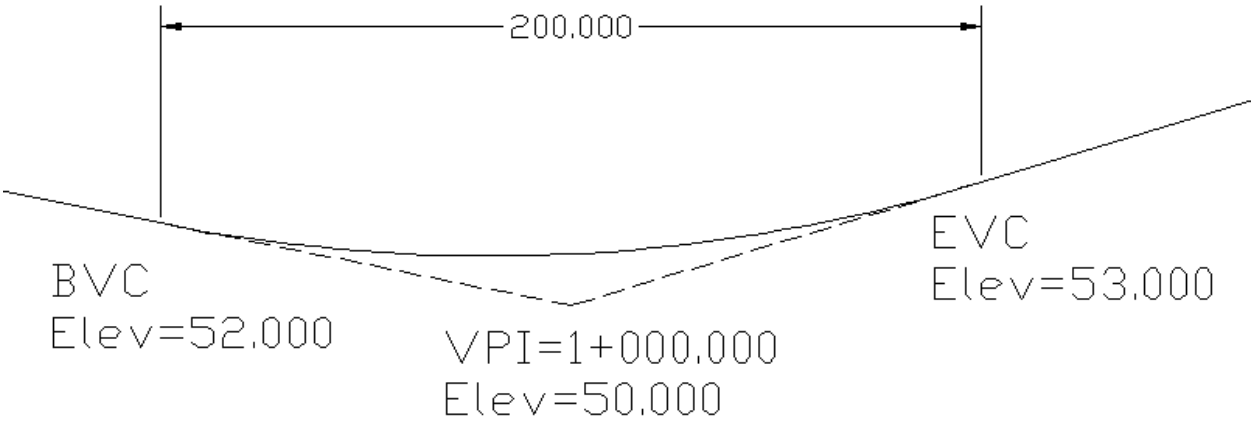
Option 3: Press F3 **[INT]** to enter a station interval and solve the elevations at each station.



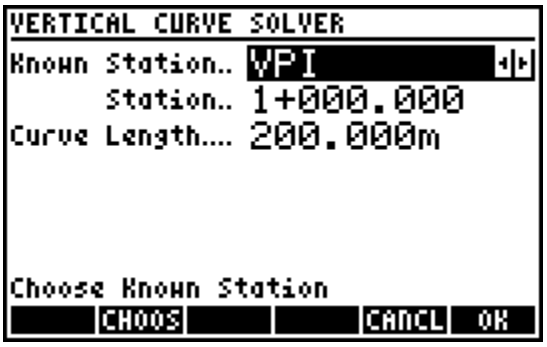


Example 2

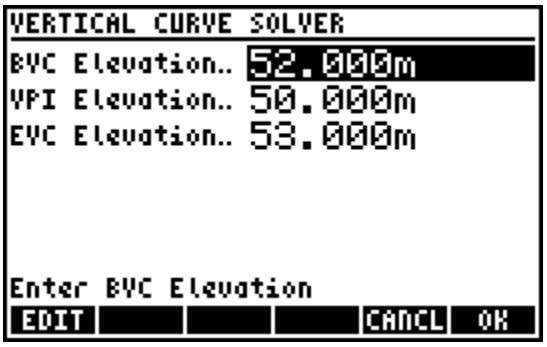
A vertical curve is given with a length of 200m and a known station at the VPI of 1+000 and known elevations at BVC of 52.000, at VPI of 50.000 and at EVC of 53.000. Solve the entry and exit grades.



Step 1: Start the Vertical Curve Solver and choose “2.Elevations + Length”, then enter the known station and length information.



Step 2: Enter the known elevation values.



Step 3: The curve solution is displayed, with values solved for the entry and exit grades, the stations at the BVC, VPI, EVC and High/Low point, and the elevation at the High/Low point. Again note the softmenu, the same options are available as shown in Example 1.