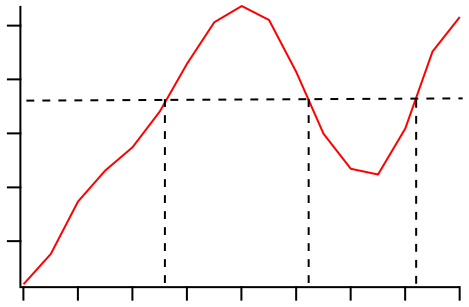


A related, but different question is "given a function y = f(x), find x where y is zero (or some other value)". This question is answered by the FindRoots operation. See **Finding Function Roots** on page III-338, and the **FindRoots** operation on page V-248.

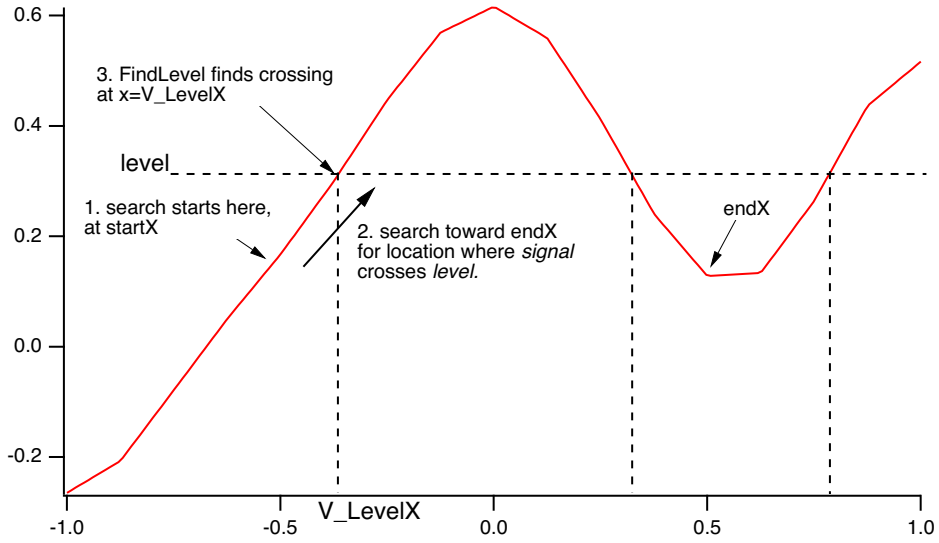
The following sections pertain to detecting level crossings in data that varies irregularly. The operations discussed are not designed to detect peaks; see **Peak Measurement** on page III-290.

Finding a Level in Waveform Data

You can use the **FindLevel** operation (see page V-242) to find a single level crossing, or the **FindLevels** operation (see page V-244) to find multiple level crossings in waveform data. Both of these operations can optionally smooth the waves they search to reduce the effects of noise. A subrange of the data can be searched, by either ascending or descending X values, depending on the *startX* and *endX* values you supply to the operation's /R flag.

FindLevel locates the first level crossing encountered in the search range, starting at *startX* and proceeding toward *endX* until a level crossing is found. The search is performed sequentially. The outputs of FindLevel are two special numeric variables: V_Flag and V_LevelX. V_Flag indicates the success or failure of the search (0 is success), and V_LevelX contains the X coordinate of the level crossing.

For example, given the following data:



the command:

```
FindLevel/R=(-0.5,0.5) signal,0.30
```

prints this level crossing information into the history area: