Subject: Re: How to calculate the abscissa values for the given vertical values
Posted by Maarten[1] on Tue, 06 Oct 2009 11:04:59 GMT
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On Oct 5, 6:26 pm, "Jean H." <jghas...@DELTHIS.ucalgary.ANDTHIS.ca>
wrote:

> x = findgen(1000)/1000*4*pi
> y = cos(x)
>
> Ytarget = 0
>
> ;Find the 2 consecutive points that are > and < of the Y threshold value
> ;(don't forget to deal where a point = the value)
>
> Xidx = where((y gt Ytarget and shift(y,1) lt Ytarget) or (y lt Ytarget
> and shift(y,1) gt Ytarget), count)

I think this is easier, and possibly faster:
Xidx = where((y-ytarget)*shift(y-ytarget,1) le 0, count)

The multiplication will only be negative if two points straddle the
crossing. The value 0 will be repeated twice if one of the points
matches exactly. These are easy to take out beforehand. The rest is as
before.

> ;y = ax+b
> a = (y[xIdx] - y[xIdx+1]) / (x[xIdx] - x[xIdx+1])
> b = y[xIdx]-a*x[xIdx]
> Xsolution = (yTarget - b)/a

Maarten