

# Re: very simple: intersection of zeroes of two functions

**Source:** <http://sci.tech-archive.net/Archive/sci.math/2005-01/7970.html>

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**From:** William Elliot (*marsh\_at\_privacy.net*)

**Date:** 01/27/05

Date: Wed, 26 Jan 2005 22:50:41 -0800

On Wed, 26 Jan 2005, Alex Hunsley wrote:

> *José Carlos Santos wrote:*

>> *On 26-01-2005 14:26, Alex Hunsley wrote:*

>>

>>> *Take two functions, say  $f(x)$  and  $g(y)$  (on reals only).*

>>> *If I want a function  $H(x)$  which has zeroes at the intersection of the*

>>> *zeroes of  $f$  and  $g$ , the simplest definition would appear to be:*

>>>

>>>  $H(x) = \text{sqrt}(f(x)^2 + g(x)^2)$

>>

>> *Yes, it makes sense. Of course, you would achieve the same result with*

>>  $H(x) = |f(x)| + |g(x)|,$

>>

> *sorry, just to clarify, the simpler the expression (computationally) the*

> *better!*

Let  $Z(x) = 0$  if  $x = 0$ ,  $= 1$  otherwise.

$$H(x) = Zf(x) + Zg(x)$$

or if you numerical form of & which is computationally easier than +

$$H(x) = Zf(x) \& Zg(x)$$