

Re: A question on Newton's Method

Source: <http://sci.tech-archive.net/Archive/sci.math.num-analysis/2005-04/msg00009.html>

- *From:* Jon Harrop <usenet@xxxxxxxxxxxxxxxx>
 - *Date:* Fri, 01 Apr 2005 00:36:54 +0100
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David M wrote:

> FORTRAN is the
> language I'm using since its easier then some of the others out
> there

If you're just starting out then I recommend you use a more appropriate language, like Mathematica (commercial) or OCaml (free). Both of these languages let you concentrate on the problem at hand, rather than having to mess about with computer-specific problems. They are also much easier to learn and use and they will allow you to solve much more difficult and interesting problems.

> someone pointed out that using the quadratic equation is not
> exactly stable when it comes to computers.

Yes, evaluating the expressions for solutions to a quadratic as they are taught at school is not numerically stable when you are using floating point arithmetic. This is actually pedagogical example used to teach numerical robustness.

> So doing some looking
> around I found a book called "Applied Numerical Methods" that showed
> how Newton's Method worked. But it's a bit vague since its meant for
> someone a bit more advanced then I am (I'm in Calc 2).

If you are referring to the iterative Newton-Raphson method then that is not the conventional way to find the roots of a quadratic robustly. You should simply rearrange the expressions into a robust form.

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- *Follow-Ups:*
 - ◆ ***Re: A question on Newton's Method***
 - ◇ *From:* Phillip Helbig—remove CLOTHES to reply

Re: A question on Newton's Method

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◇ From: beliaivsky

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◇ From: David M

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