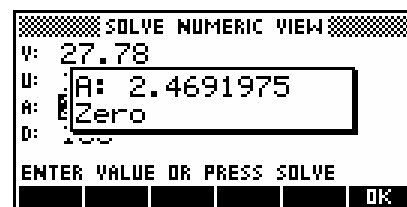


## The Meaning of **INFO** Messages in Solve

Suppose we use the equation  $v^2 = u^2 + 2ad$  with  $V=27.78$ ,  $U=16.67$  and  $D=100$  and we are solving for  $A$ .



Thus:  $v^2 = u^2 + 2ad$   
becomes:  $(27.78)^2 - (16.67)^2 - 2 \times a \times 100 = 0$

when substituted and re-arranged (as the calculator does internally).

When you press **INFO** after doing a solve like this there are a number of possible positive responses. They are:

- **Zero** - The calculator tried to find a value of  $A$  which made this zero and, in the **INFO** message shown above, it is reporting that it succeeded.
- **Sign reversal** - This also indicates a correct solution, since normally one expects to find an answer of zero at a point where the re-arranged equation changes from positive to negative (or vice versa). 'Sign reversal' is a report that it couldn't get an answer to 12 significant digits that was precisely zero, just two answers minutely on either side of zero. This might indicate a discontinuity at the point but is more likely to indicate a satisfactory answer.

The only time that you need to worry is when you receive any of the messages below. These are:

- **Extremum** - it found a minimum, but could not reach zero. Try solving the equation  $(x-2)^2 + 4 = 0$  and you will see this. The smallest value that  $(x-2)^2 + 4 = 0$  can have is 4 at  $x=2$ , so the answer supplied will be very close to this (such as 2.000000001 or 1.999999999). This isn't a solution, since it didn't reach the required value of zero, but the problem is that unless you check **INFO** you may not realize that this is not actually a valid solution.
- **Bad Guess** - the initial estimate you supplied was outside the domain of the function. For example, the equation uses a square root or a logarithm and you began from a value involving a negative.
- **Constant?** - no solution was found. The value of the function was the same at every point tested and wasn't the value you wanted.