

falsePosition.m

This function uses false position to estimate the root of a function. This is a numerical estimate.

Within MATLAB (or Octave) this function can be called upon using `[root,fx,ea,iter] =`

`falsePosition(func,xl,xu,es,maxiter).`

Inputs

- `func` - The evaluated function
- `xl` - The lower bound (*estimate*) of the root
- `xu` - The upper bound (*estimate*) of the root
- `es` - The desired relative error in percent (*default is 0.0001%*)
- `maxiter` - The max number of iterations preformed (*default is 200*)

Outputs

- `root` - The estimated x value of the root
- `fx` - The function evaluated at the location of the root (*should be very close to zero*)
- `ea` - The approximate relative error in percentage
- `iter` - The number of iterations preformed

Useful Knowledge

- `func` can either be a MATLAB symbolic expression or an anonymous function. `falsePosition` plays nicer with anonymous functions however.

Limitations

`falsePosition` cannot determine the root of a function with more than one variable. As a numerical estimate it will not be as accurate as the built-in MATLAB functions `root` or `roots`.