

Find solutions for your homework



home / study / math / advanced math / advanced math questions and answers / write a matlab function that uses bisection method to iteratively ...

## Question: Write a MATLAB function that uses Bisection Method to iterati...

Write a MATLAB *function* that uses Bisection Method to iteratively estimate the positive real root of the

equation  $\ln(x^4) = 0.7$  in the interval  $[x_l, x_u]$  until  $\epsilon_a$  is less than  $\epsilon_s$ . Note that  $x$  is in radians.

The *function* should accept 3 parameters: initial  $x_l$ ,  $x_u$ , and  $\epsilon_s$ , and return these 5 parameters for each

iteration:  $x_l$ ,  $x_u$ ,  $x_r$ ,  $x_w$ ,  $x_r$ ,  $\text{Sign}(f(x_l)f(x_r))$ ,  $f(x_l)f(x_r)$  and  $\epsilon_a$ . (Hint: Function should return arrays instead of single values).

Please write a script which gives output in the following tabular form for the developed function using

$x_l = 0.5$ ,  $x_t = 0.5$ ,  $x_u = 2$  and  $\epsilon_s = 0.1\%$ . Submit the snapshot of the output of the script.

## Expert Answer



Anonymous answered this  
103 answers

Was this answer helpful?



```
function m = bisection(f, low, high, tol)
disp('Bisection Method');
```

```
% Evaluate both ends of the interval
y1 = feval(f, low);
y2 = feval(f, high);
i = 0;
```

```
% Display error and finish if signs are not different
if y1 * y2 > 0
    disp('Have not found a change in sign. Will not continue...');
    m = 'Error'
    return
end
```

```
% Work with the limits modifying them until you find
% a function close enough to zero.
disp('Iter low high x0');
while (abs(high - low) >= tol)
    i = i + 1;
    % Find a new value to be tested as a root
    m = (high + low)/2;
    y3 = feval(f, m);
    if y3 == 0
        fprintf('Root at x = %f \n\n', m);
        return
    end
    fprintf('%2i \t %f \t %f \t %f \n', i-1, low, high, m);
```

Comment >

## Questions viewed by other students

**Q:** The answer should be in MATLAB source (.m) file(s) and snapshot of the output (copied in a single document file) when you run the program for the conditions mentioned in the questions below. Write a MATLAB function that uses Bisection Method to iteratively estimate the root of the equation in the interval  $[x_l, x_u]$  until  $\epsilon_a$  is less than  $\epsilon_s$ . Note that  $x$  is in radians. The function...

**A:** [See answer](#)

**Q:** Please write a MATLAB function satisfy the following with the given output.

## Post a question

Answers from our experts for your tough homework questions

Enter question

**Continue to post**

0 questions remaining



**Snap a photo from your phone to post a question**

We'll send you a one-time download link

888-888-8888

**Text me**

By providing your phone number, you agree to receive a one-automated text message with a link to get the app. Standard messaging rates may apply.

## My Textbook Solutions



Taxation of Business...  
2nd Edition



Fundamentals of Applied...  
7th Edition



Structural Analysis  
7th Edition

[View all solutions](#)

## Advanced Math Chegg tuto who can help right now



David R.  
Universidad de los A...

1482



Aman R.  
JAMIA MILLIA ISLA...

865



Lav G.  
Ph.D

11

**Find me a tutor**

TUTORS CHAT



A: [See answer](#)

[Show more](#) ▼

---

COMPANY ▼

---

LEGAL & POLICIES ▼

---

CHEGG PRODUCTS AND SERVICES ▼

---

CHEGG NETWORK ▼

---

CUSTOMER SERVICE ▼

---



© 2003-2020 Chegg Inc. All rights reserved.

TUTORS CHAT

