

BISECTION ALGORITHM PROBLEMS

1. Find a root for the polynomial $f(x) = x^3 + x - 5$ to within ± 0.01 .
2. Solve the equation $\sin(x) = 1 - x$ for $0 < x < \pi$. You will see by graphing that there is one solution. Locate it with the bisection algorithm to a tolerance of ± 0.01 . Use your axe to verify this by invoking the `solve` feature.
3. Find $\sqrt[3]{100}$ to an error tolerance of ± 0.01 .
4. Go to the library and use the big unabridged dictionary for this exercise. Look up the word “quiescent” using the following procedure. Find the total number of pages in the dictionary and divide by 2. List the two guide words on that page and the page number. If quiescent is past the second guide word, repeat the procedure with the second half of the dictionary; otherwise use the first half. Keep going until you zero in on the word’s page. ;