Math 4670/5670 Homework Two

September 25, 2017

1. Write a Fortran program to solve x3-30=0 using the method of bisection.
2. Solve problem 17 of section 2.3 in the text book. Use a program you create, and use either bisection, the secant method or Newton’s method.
3. Write a program to solve problem 15 of section 2.4.
4. Write a Fortran program to solve x3-30=0 using the method of bisection.

f(0) = -30 f(1) = -29 f(2) = -22

f(3) = -3 f(4) = 36

! Mikayla Webber

! 4670 Numerical Analysis Homework Two

implicit none

real::fxa, fxb, xn, x1, x2, fnew, fxn

x1 = 3

x2 = 4

//1xnew=(x1+x2)/2?

fxa = (xn\*\*3 - 30)

fxb = (x2\*\*3 - 30)

fnew = (fxa \* fxb)

if fxn < 0 then

x2 = x2

xn = x1

go to 1

if fxn > 0 then

xn = x1

x1 = x1

go to 1

print\*, "fx(a) = ", fxa

print\*, "fx(b) = ", fxb

1. Solve problem 17 of section 2.3 in the text book. Use a program you create, and use either bisection, the secant method or Newton’s method.

! Mikayla Webber

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implicit none

real:: t, x, g, w

read(\*,\*) t,x,g

print\*, “t = “, t

print\*, “x = “, x

print\*, “g = “, g

if(t < 0.01) then

w = -(gt/x)

print\*, “rate = “, w

else

print\*, “difficulty getting direct solution.”

end if

end

1. Write a program to solve problem 15 of section 2.4.

! Mikayla Webber

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implicit none