EGME 2050 Computational Methods

Spring 2022

Lab Week 14

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**Problem 1: Section 32.9**

function [SL, SR] = myRiemann(x,y)

%Initialize the value of SL and SR

SL=0;

SR=0;

%Left Riemann Sum

for i=1:length(x)-1

SL=SL+(x(i+1)-x(i))\*y(i);

end

%Right Riemann Sum

for i=1:length(x)-1

SR=SR+(x(i+1)-x(i))\*y(i+1);

end

end

**Problem 2: Section 32.10**

%Assign values to rho and r, convert r to m

r =1000\*[0,800,1200,1400,2000,3000,3400,3600,4000,5000,5500,6370];

rho=[13000,12900,12700,12000,11650,10600,9900,5500,5300,4750,4500,3300];

%Creates anonymous function, with ro as the variable

f=@(r,x) 4\*pi\*x\*r^2;

m=0;

for i=1:(length(r)-1)

%Trapezoid rule

m=m+(r(i+1)-r(i))\*(f(r(i),rho(i))+f(r(i+1),rho(i+1)))/2;

end