**EGN3204 — Engineering Software Tools**

**Pensacola (82151) Section, Fall 2014**

**Problem Set #9 (October 30th, 2014 Lecture)**

**(Word, Matlab R2013a)**

James Davis

1. The matlab code for problems 1 - 5 is given in Figure 1 and the output for problems 1- 5 is given in Figure 2 – 6 respectively.

%James Davis, EGN3204, Fall 2014

% MATLAB m file for problem 1 - 5, Project 9

%Clears the input

clear all;

%Creates functions

syms x y n;

f1 = int((3\*x^4+2)/(x^2-3),x);

f2 = int(((3\*x+1)^(1/5))/(x^2+2)^(1/4));

f3 = int(int(x\*y^2,x,2\*y,y^2),y,2,4);

f4 = int((log(5\*x)^3/x^2),x,2,10);

f5 = limit(-(x+4)/(x^2+6\*x),x,-6,'left');

f6 = limit((x+4)/(x^2+6\*x),x,-6,'right');

f7 = symsum(2/(6^n),0,inf);

f8 = symsum(10^n/(sym('n!')),1,inf);

f9 = subs(2\*x^3.5 - 2\*x^2.5 - 4\*x + 5\*x^-1.5,-2);

f10 = subs(exp(-sqrt(x))+acos(x)+sqrt(x),-1.5);

%display functions

%Problem 1, display using pretty

disp 'Problem 1'

pretty(f1)

pretty(f2)

%Problem 2, display using eval

disp 'Problem 2'

eval(f3)

eval(f4)

%Problem 3, display default

disp 'Problem 3'

f5

f6

%Problem 4, display using eval

disp 'Problem 4'

eval(f7)

eval(f8)

%Problem 5, disply using eval because matlab > R2013a

disp 'Problem 5'

eval(f9)

eval(f10)

**Figure 1.** The code for problems 1 --- 5

Problem 1

/ 1/2 \

1/2 | 3 x |

29 3 atanh| ------ |

\ 3 / 3

9 x - ----------------------- + x

3

/ 1/5

| (3 x + 1)

| ------------ dx

/ 2 1/4

(x + 2)

**Figure 2.** The output for problem 1.

Problem 2

ans =

764.3429

ans =

10.4393

**Figure 3.** The output for problem 2.

Problem 3

f5 =

Inf

f6 =

Inf

**Figure 4.** The output for problem 3.

Problem 4

ans =

2.4000

ans =

2.2025e+04

**Figure 5.** The output for problem 4.

Problem 5

ans =

8.0000 -32.1734i

ans =

3.4808 - 0.6784i

**Figure 6.** The output for problem 5.