

EGN3204 — Engineering Software Tools
Pensacola (82151) Section, Fall 2014
Problem Set #10 (November 6, 2014 Lecture)
(Word, Matlab R2013a)

1. The matlab code for problems 1 is given in Figure 1 and the output for problems 1 is given in Figure 2.

```
%James Davis, EGN3204, Fall 2014
% MATLAB m file for problem 1, Project 11
clear all
clear console
logic = 0;

while logic == 0
prompt = '\nInput an x value: ';
x = input(prompt);

prompt = 'Input an n value: ';
n = input(prompt);
if -1 <= x && 1 > x
    if n >= 1 && rem(n,1) == 0
        logic = 1;
    end
else
    fprintf('Plese enter valid numbers\n');
end

end
x1 = x;
x = 0;
for logic = 1:n
    x = (x1^logic)/(logic) + x;
end
output = ['The estimated result is ', num2str(x)...
    , 'and the actual result is ', num2str(log(1/(1-x1)))];
disp(output)
y = x;
```

Figure 1. The matlab m file for problem 1.

Input an x value: -0.87
Input an n value: 15
The estimated result is -0.62964and the actual result is -0.62594

Input an x value: -0.87
Input an n value: 30
The estimated result is -0.6257and the actual result is -0.62594

Input an x value: -0.87
Input an n value: 50
The estimated result is -0.62593and the actual result is -0.62594

Input an x value: 0.25
Input an n value: 15
The estimated result is 0.28768and the actual result is 0.28768

Input an x value: 0.25
Input an n value: 30
The estimated result is 0.28768and the actual result is 0.28768

Input an x value: 0.25
Input an n value: 50
The estimated result is 0.28768and the actual result is 0.28768

Input an x value: 0.98
Input an n value: 15
The estimated result is 3.0381and the actual result is 3.912

Input an x value: 0.98
Input an n value: 30
The estimated result is 3.4722and the actual result is 3.912

Input an x value: 0.98
Input an n value: 50
The estimated result is 3.6999and the actual result is 3.912

Figure 2. The selected outputs for problem 1.

2. The matlab code for problem 2 is given in Figure 3, and the function called in the problem is given in Figure 4. The selected outputs for the problem are given in Figure 5.

```
%James Davis, EGN3204, Fall 2014
% MATLAB m file for problem 2, Project 11
```

```
clear all
clear console
```

```
amount = input('Input amount of US $');
```

```
type = input('Currency to change: ','s');
```

```
newamount = currency_convert(amount,type);
```

Figure 3. the matlab m file for problem 2.

```
%James Davis, EGN3204, Fall 2014
% MATLAB m file for problem 2, Project 11
```

```
function z = currency_convert(x,y)
if strcmp('euro', y) == 1
    newx = x * 0.791948;
    fprintf('$%0.2f is equivalent to €%0.2f'...
        ,x,newx);
end
if strcmp('pound', y) == 1
    newx = x * 0.622259;
    fprintf('$%0.2f is equivalent to £%.02f'...
        ,x,newx);
end
if strcmp('yen', y) == 1
    newx = x * 107.551;
    fprintf('$%0.2f is equivalent to ¥%0.2f'...
        ,x,newx);
end

z = newx;

end
```

Figure 4. The function called in Figure 3.

Input amount of US \$47.56
Currency to change: yen
\$47.56 is equivalent to ¥5115.13

Input amount of US \$138.24
Currency to change: euro
\$138.24 is equivalent to €109.48

Input amount of US \$91.68
Currency to change: pound
\$91.68 is equivalent to £57.05

Figure 5. The selected outputs for problem 2.