

Math 426/CISC 410 08F, All sections

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Homework 2 Solution

Problem 1. The script and what it does in the command window are shown below. The plot is shown in Figure 1; it's not part of the \LaTeX file that I used to make this document. Note that a typical diary file won't have the prompt shown (`>>`); I edit it in for easy reading.

```
>> type Hw2_08f_1

% Script:  Problem 1, Hw 2
%         make a simple plot.

n = 101;
u = linspace(0,3,n);
v = exp(-u); % all function evaluations done at once!
plot(u,v)
xlabel('u'); ylabel('v')
title('Hw 2, Problem 1')

>> Hw2_08f_1
>>
```

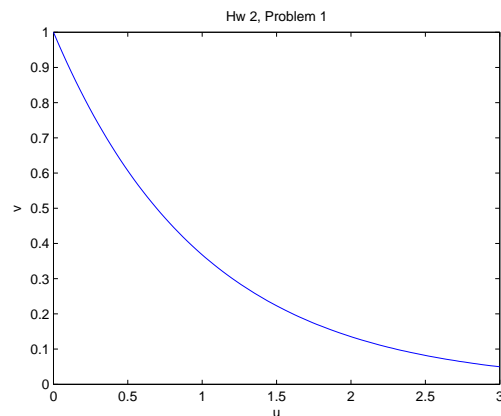


Figure 1: A simple plot with axis labels and title.

Problem 2. The table from §7.3 in the matlab problem list is created.

```
>> type Hw2_08f_2

% Script:  table of Sec 7.3 of Matlab problem list
```

```

t = logspace(-3,6,10);
x = 0.1234567890123456*t;
disp(' ') % a blank line
disp(' k          t          x          ')
disp('-----')
for k=1:10
    disp(sprintf('%2.0f    %7.3g    %7.7e',k,t(k),x(k)))
end

```

```
>> Hw2_08f_2
```

```

k          t          x
-----
1          0.001      1.2345679e-004
2           0.01      1.2345679e-003
3           0.1       1.2345679e-002
4            1        1.2345679e-001
5            10       1.2345679e+000
6            100      1.2345679e+001
7           1e+003    1.2345679e+002
8           1e+004    1.2345679e+003
9           1e+005    1.2345679e+004
10          1e+006    1.2345679e+005
>>

```

Problem 3. Acceptable contents of a diary file follow for this problem. Note that one could cut and paste the input and answers into a word processor as well.

```
>> type Hw2_08f_3
```

```

% Script for Hw 2, 08f.
% Problem 3; display the output for second part of 11.2 of the Beginning
% Matlab Problems

```

```

g = [1 2 3 4; 5 6 7 8; 9 10 11 12]
h = [3 3 4 4; 5 5 6 6; 7 7 8 8]
h >= g
g == h
bigger = (g >= h)
g(bigger)
g([0 0 0 1; 1 1 1 1; 1 1 1 1])
>> Hw1_07f
g =
     1     2     3     4
     5     6     7     8
     9    10    11    12

```

```

h =
    3    3    4    4
    5    5    6    6
    7    7    8    8
ans =
    1    1    1    1
    1    0    0    0
    0    0    0    0
ans =
    0    0    0    1
    1    0    0    0
    0    0    0    0
bigger =
    0    0    0    1
    1    1    1    1
    1    1    1    1
ans =
    5
    9
    6
    10
    7
    11
    4
    8
    12
??? Subscript indices must either be real positive integers or logicals.

Error in ==> Hw1_07f at 11
g([0 0 0 1; 1 1 1 1; 1 1 1 1])
>>

```