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.

```matlab
>> 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')
```

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

```matlab
>> type Hw2_08f_2

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

Figure 1: A simple plot with axis labels and title.
\[ t = \logspace(-3, 6, 10); \]
\[ x = 0.1234567890123456 * t; \]
\[ \text{disp(' ')} \quad \% \text{ a blank line} \]
\[ \text{disp(' k \quad t \quad x ')} \]
\[ \text{disp('----------------------------')} \]
\[ \text{for } k=1:10 \]
\[ \quad \text{disp(sprintf(' %2.0f \quad %7.3g \quad %7.7e', k, t(k), x(k)))} \]
\[ \end \]

\[ >> \text{Hw2_08f_2} \]

\[ \begin{array}{ccc}
\hline
k & t & x \\
\hline
1 & 0.001 & 1.2345679e-004 \\
2 & 0.01 & 1.2345679e-003 \\
3 & 0.1 & 1.2345679e-002 \\
4 & 1 & 1.2345679e-001 \\
5 & 10 & 1.2345679e+000 \\
6 & 100 & 1.2345679e+001 \\
7 & 1e+003 & 1.2345679e+002 \\
8 & 1e+004 & 1.2345679e+003 \\
9 & 1e+005 & 1.2345679e+004 \\
10 & 1e+006 & 1.2345679e+005 \\
\end{array} \]

\[ >> \]

**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.

\[ >> \text{type Hw2_08f_3} \]

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

\[ g = \begin{bmatrix} 1 & 2 & 3 & 4; 5 & 6 & 7 & 8; 9 & 10 & 11 & 12 \end{bmatrix} \]
\[ h = \begin{bmatrix} 3 & 3 & 4 & 4; 5 & 5 & 6 & 6; 7 & 7 & 8 & 8 \end{bmatrix} \]
\[ h \geq g \]
\[ g == h \]
\[ \text{bigger} = (g \geq h) \]
\[ g(\text{bigger}) \]
\[ g([0 \ 0 \ 0 \ 1; 1 \ 1 \ 1 \ 1; 1 \ 1 \ 1 \ 1]) \]

\[ >> \text{Hw1_07f} \]

\[ g = \begin{bmatrix} 1 & 2 & 3 & 4 \\
5 & 6 & 7 & 8 \\
9 & 10 & 11 & 12 \end{bmatrix} \]
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])
>>