MATLAB.2

Minimization

To find where a function attains its minimum on an interval we use the
fminbnd
command.

Example
First we make an M-file.

```
************************************************
function w=f(x)
w=exp(-x^2+2*x)-.5;
************************************************
```

To find where f attains its minimum on [-1,3] go to the command window and
type:

```
************************************************
xm=fminbnd('f(x)',-1,3)
************************************************
```

To find the minimum value type:

```
************************************************
f(xm)
************************************************
```

NOTE f(x) maximizes where -f(x) minimizes. To find the maximum value of
f(x) on
[-1,3] type:

```
************************************************
xM=fminbnd('-f(x)',-1,3);
f(xM)
************************************************
```

To find the maximum of abs(f(x)) on [-1,3] type:

```
************************************************
xM=fminbnd('-abs(f(x))',-1,3);
abs(f(xM))
************************************************
```

ASSIGNMENT 2:

Let
h(x)=x^3-6*x^2+x.

Graph h(x) on [-1,5].
Find where h(x) maximizes on [-1,5] and its maximum value.
Find where h(x) minimizes on [-1,5] and its minimum value.