MATH 3940 Problem Set 5 Solutions - Matlab

Question 2: (b) M-File for the function is

```
function E=EQ1(V)
a=V(1);
b=V(2);
E=zeros(1,2);
E=(6.62-b*exp(-a))^2+(3.94-b)^2+(2.17-b*exp(a))^2+(1.35-b*exp(2*a))^2+(0.89-b*exp(3*a))^2;
```

```
>> fminsearch('EQ1',[1 1])
ans =   -0.5317    3.8911
```

Thus the least-squares approximation is y=3.8911e^(-0.5317x)

In Octave, you can use fminsearch or fminunc as below

```
>> fminunc('EQ1',[1 1])
ans =  -0.53166   3.89113
```

Thus the least-squares approximation is y=3.89113e^(-0.53166x)