Series of Curves in Octave

November 1, 2019

1 Homework 9 - Q6

1.1 Problem Statement:

Choose x to be a 1D array with values from 0.01 to 0.99 in intervals of 0.02. Plot a family of curves of the following function for values of M ranging from 0 to 4 in steps of 0.5.

$$f(x) = x\log(x) + (1-x)\log(1-x) + Mx\log(x)$$

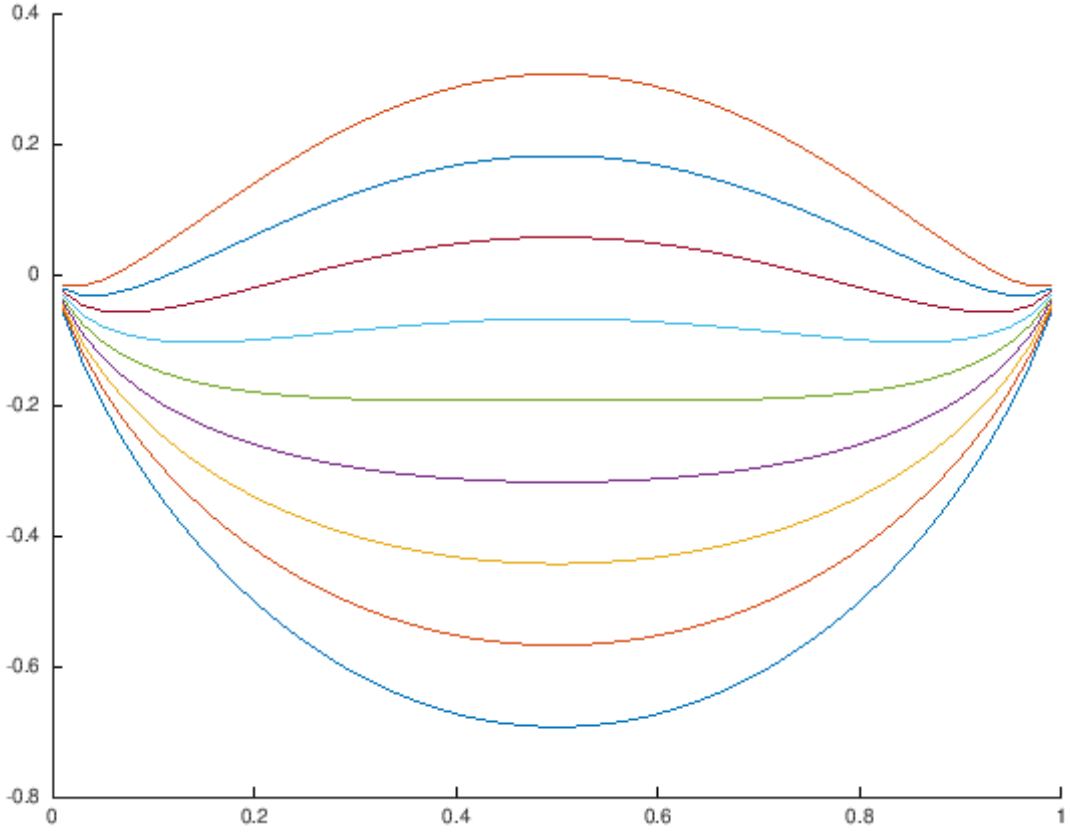
Generating the array `x`:

[1]:
```
x = [0.01:0.02:0.99];
```

`hold on` is used to prevent plotting from occuring in separate graphs.

Thus, we have the following graph for different values of M

[2]:
```
hold on
for M = [0:0.5:4]
    y = x.*log(x)+(1.-x).*log(1.-x).+M.*x.*(1.-x);
    plot(x,y)
endfor;
```


0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
0
0.2
0.4
0.6
0.8
1