

9_4

November 24, 2019

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.

```
[62]: for i = 1:100
      x(i) = -0.01 + i*0.02;
    end
    x
```

$x =$

Columns 1 through 7:

0.010000	0.030000	0.050000	0.070000	0.090000	0.110000	0.130000
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Columns 8 through 14:

0.150000	0.170000	0.190000	0.210000	0.230000	0.250000	0.270000
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Columns 15 through 21:

0.290000	0.310000	0.330000	0.350000	0.370000	0.390000	0.410000
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Columns 22 through 28:

0.430000	0.450000	0.470000	0.490000	0.510000	0.530000	0.550000
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Columns 29 through 35:

0.570000	0.590000	0.610000	0.630000	0.650000	0.670000	0.690000
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Columns 36 through 42:

0.710000	0.730000	0.750000	0.770000	0.790000	0.810000	0.830000
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Columns 43 through 49:

0.850000	0.870000	0.890000	0.910000	0.930000	0.950000	0.970000
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Columns 50 through 56:

0.990000	1.010000	1.030000	1.050000	1.070000	1.090000	1.110000
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Columns 57 through 63:

1.130000	1.150000	1.170000	1.190000	1.210000	1.230000	1.250000
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Columns 64 through 70:

1.270000	1.290000	1.310000	1.330000	1.350000	1.370000	1.390000
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Columns 71 through 77:

1.410000	1.430000	1.450000	1.470000	1.490000	1.510000	1.530000
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Columns 78 through 84:

1.550000	1.570000	1.590000	1.610000	1.630000	1.650000	1.670000
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Columns 85 through 91:

1.690000	1.710000	1.730000	1.750000	1.770000	1.790000	1.810000
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Columns 92 through 98:

1.830000	1.850000	1.870000	1.890000	1.910000	1.930000	1.950000
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Columns 99 and 100:

1.970000	1.990000
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```
[66]: for M = 0:8;
      a=M/2
      y = x.*log(x) + (1-x).*log(1-x) + a*x.*(1-x);
      p=plot(x,y);
      set(p,'linewidth',[4]);
      xlabel('value of x')
      ylabel('value of f(x)')
      title('plot of f(x)')
      hold on
    end
```

```
a = 0
a = 0.50000
a = 1
```

a = 1.5000
a = 2
a = 2.5000
a = 3
a = 3.5000
a = 4

