

Lab 5

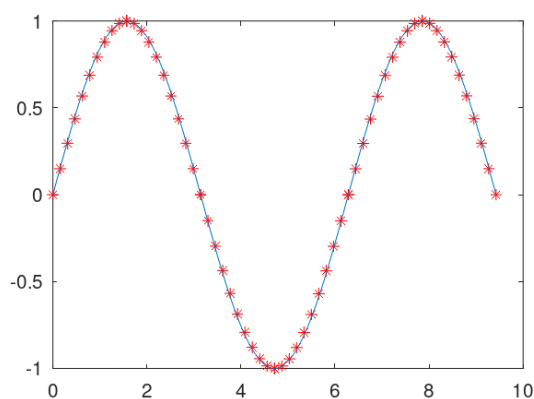
Cubic Spline Coefficients

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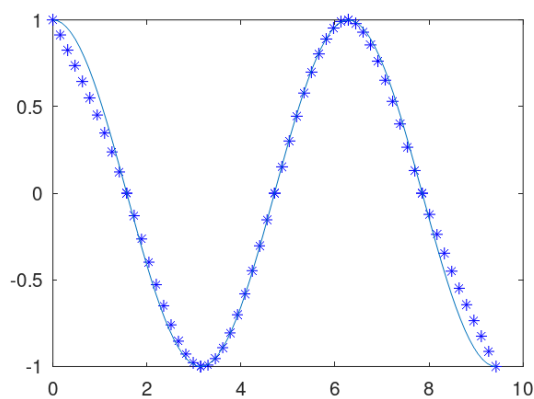
My Results

1. $y = \sin(x)$



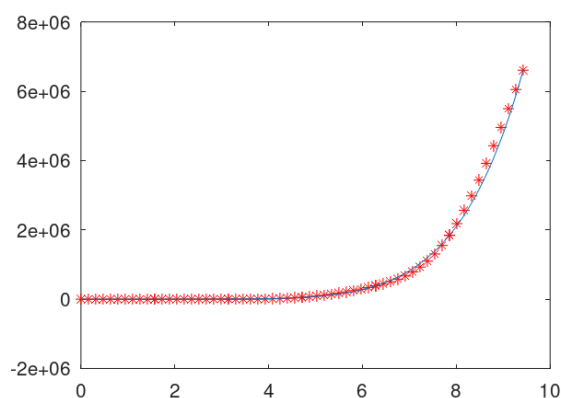
```
>>> cubic_splines()
1.000000,-0.000014,-0.607941,-0.129009
0.000000,-0.954879,0.000055,0.129021
-1.000000,-0.000188,0.607719,0.128950
-0.000000,0.961023,0.005923,-0.127705
1.000000,0.000144,-0.610751,-0.130862
0.000000,-0.956408,0.000000,0.129605
```

2. $y = \cos(x)$



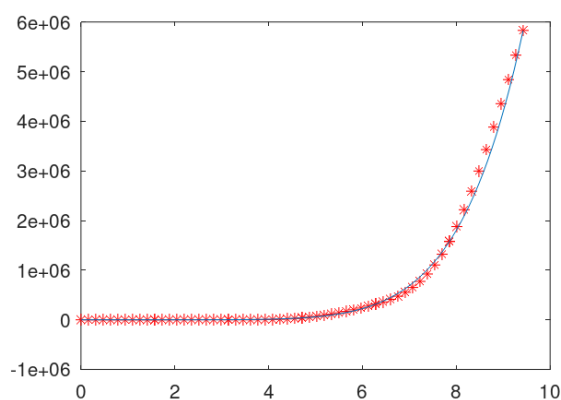
```
>> cubic_splines()  
0.000000,-0.805968,-0.161715,-0.034317  
-1.000000,-0.043903,0.646861,0.171585  
-0.000000,0.981578,0.005980,-0.135999  
1.000000,-0.041127,-0.650190,-0.139244  
0.000000,-0.812261,0.157370,0.171370  
-1.000000,-0.554221,0.000000,-0.033395
```

3. $y = x^7$



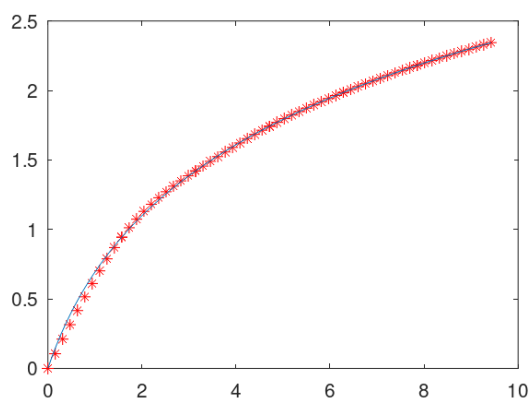
```
>> cubic_splines()  
23.596041,1953.617541,1851.222658,392.841649  
3020.293228,-1091.858791,-3790.033107,-1197.111654  
51604.541321,100926.166551,68736.725178,15390.656117  
386597.533155,330449.247027,77536.105376,1867.286473  
1843440.690782,2002851.763508,988160.059296,193240.404752  
6605381.289148,3548944.936902,0.000000,-209694.077337
```

4. $y = x^7 - x^6 - x^5 + 1$



```
>> cubic_splines()
0.011220,1742.570293,1664.633161,353.246128
1753.884349,-2750.289302,-4524.876413,-1313.454725
38330.880557,82465.154852,58774.713073,13432.590083
315276.994853,272045.419397,62033.834285,691.607001
1578842.797352,1774376.588952,895232.016773,176810.145757
5830166.783629,3175219.296263,0.000000,-189974.134245
```

5. $y = \log(x + 1)$



```
>> cubic_splines()
0.944216,0.454190,-0.140295,-0.029772
1.421080,0.222740,-0.007051,0.028275
1.742637,0.179725,-0.020333,-0.002819
1.985568,0.136040,-0.007609,0.002700
2.180867,0.112073,-0.007901,-0.000062
2.344185,0.099834,0.000000,0.001677
```