BIA - Practical - Maximise Sales&Profit

March 26, 2016

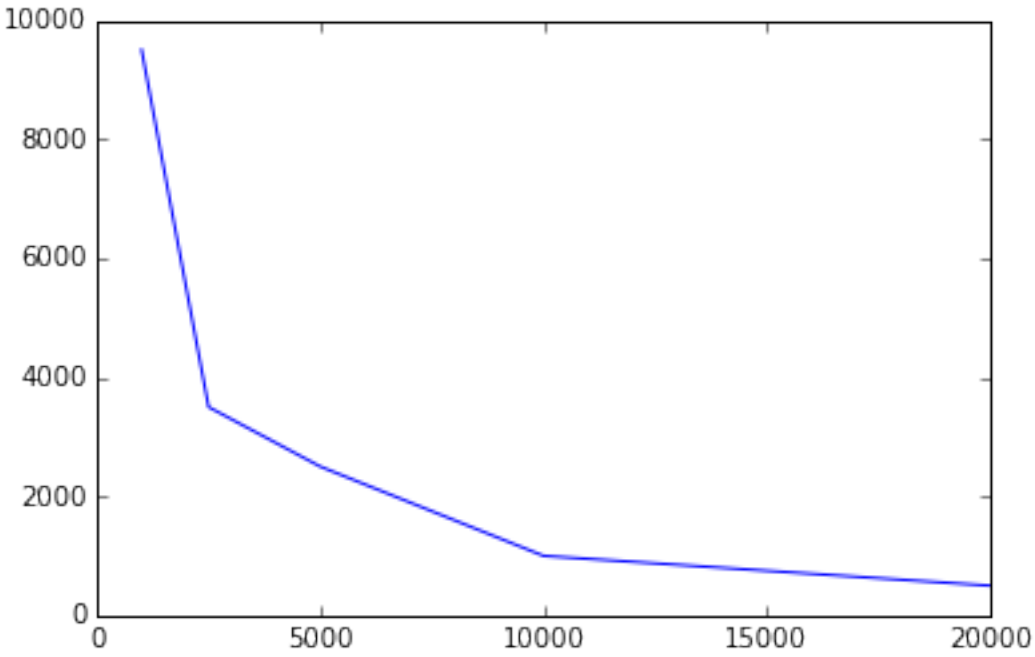
In [1]:
```
SALES = [20000,10000,5000, 2500, 2000, 1500, 1000]
SP    = [1000, 1500, 3000, 4000, 6000, 8000, 10000]
CP    = 500
```

In [2]:
```
%matplotlib inline
from matplotlib import pyplot as plt
```

In [3]:
```
PROFIT = []
for item in SP:
    PROFIT.append(item-CP)
```

In [4]:
```
plt.plot(SALES, PROFIT)
```

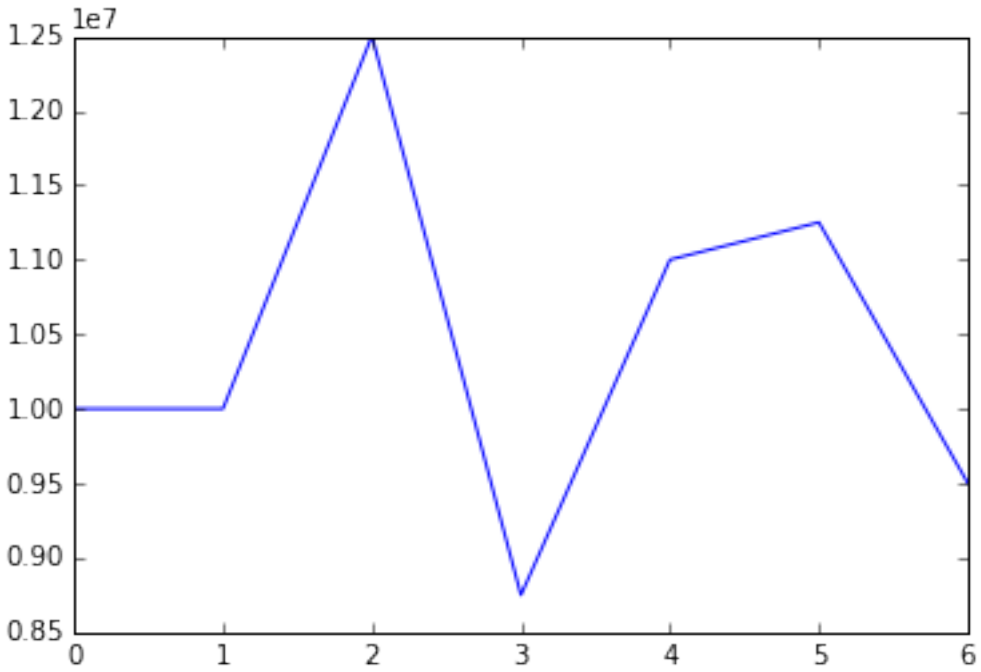
Out[4]:
```
[<matplotlib.lines.Line2D at 0x111c27ed0>]
```



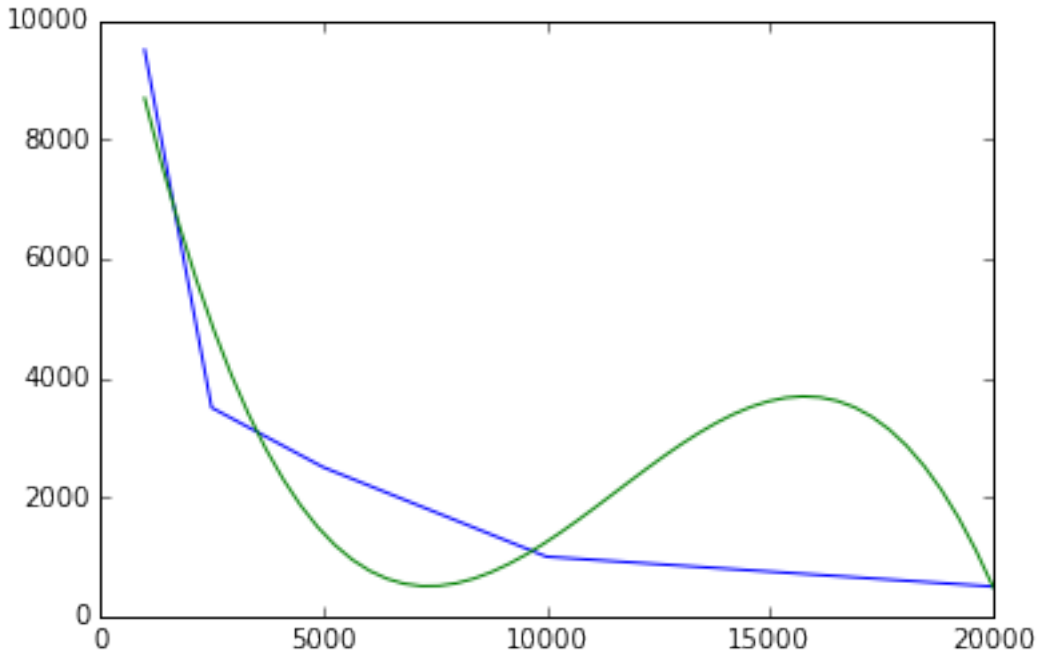
In [49]:
```
print PROFIT
```

```
[500, 1000, 2500, 3500, 5500, 7500, 9500]
```

```
In [5]: REV = []
        for i in range(len(PROFIT)):
            REV.append(SALES[i]*PROFIT[i])

In [6]: print REV
        plt.plot( REV)
        #REV_regression = np.multiply(x_new,y_new)
        #plt.plot( REV_regression)

[10000000, 10000000, 12500000, 8750000, 11000000, 11250000, 9500000]

Out[6]: [<matplotlib.lines.Line2D at 0x111d77610>]
```



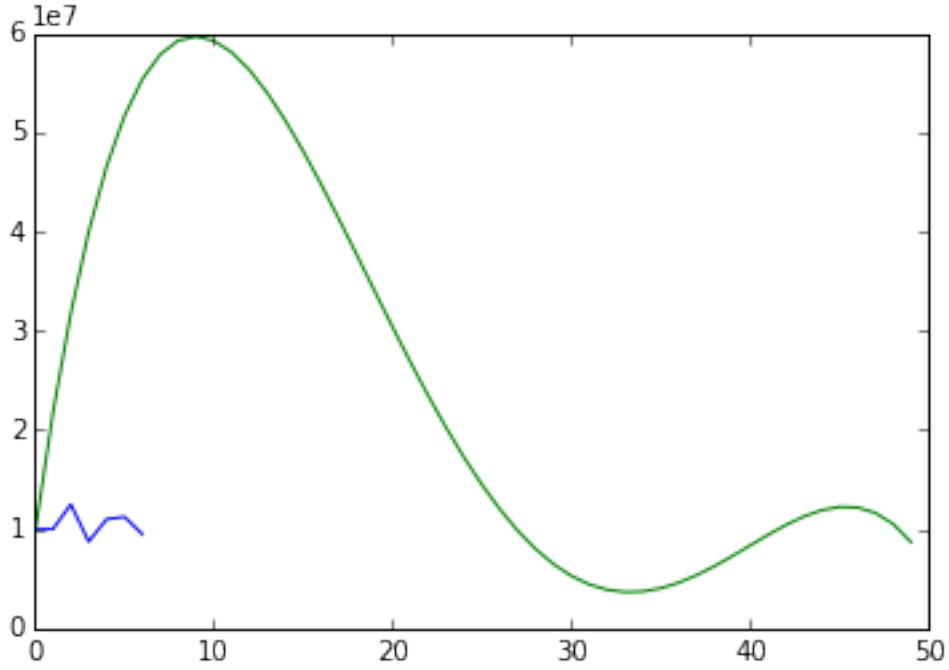

```
In [18]: import numpy as np
         z = np.polyfit(SALES, PROFIT, 3)

In [19]: p = np.poly1d(z)

In [20]: x_new = np.linspace(SALES[0], SALES[-1])

In [21]: y_new = p(x_new)

In [22]: plt.plot(SALES, PROFIT)
         plt.plot(x_new, y_new)

Out[22]: [<matplotlib.lines.Line2D at 0x111f72ad0>]
```



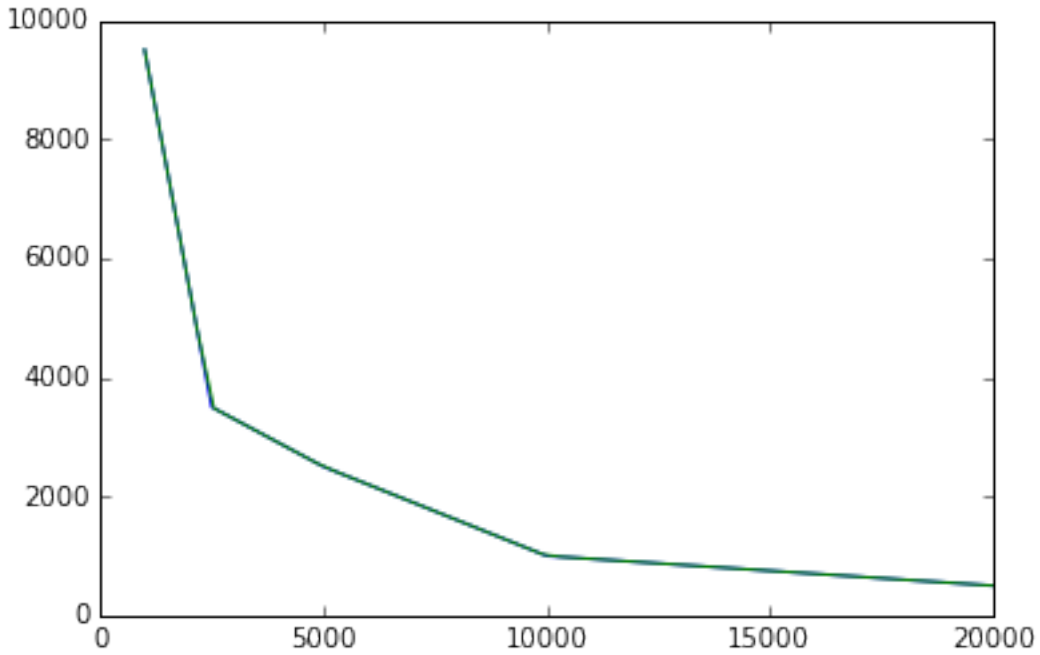
In [23]:
```
print REV
plt.plot( REV)
REV_regression = np.multiply(x_new,y_new)
plt.plot( REV_regression)
```

```
[10000000, 10000000, 12500000, 8750000, 11000000, 11250000, 9500000]
```

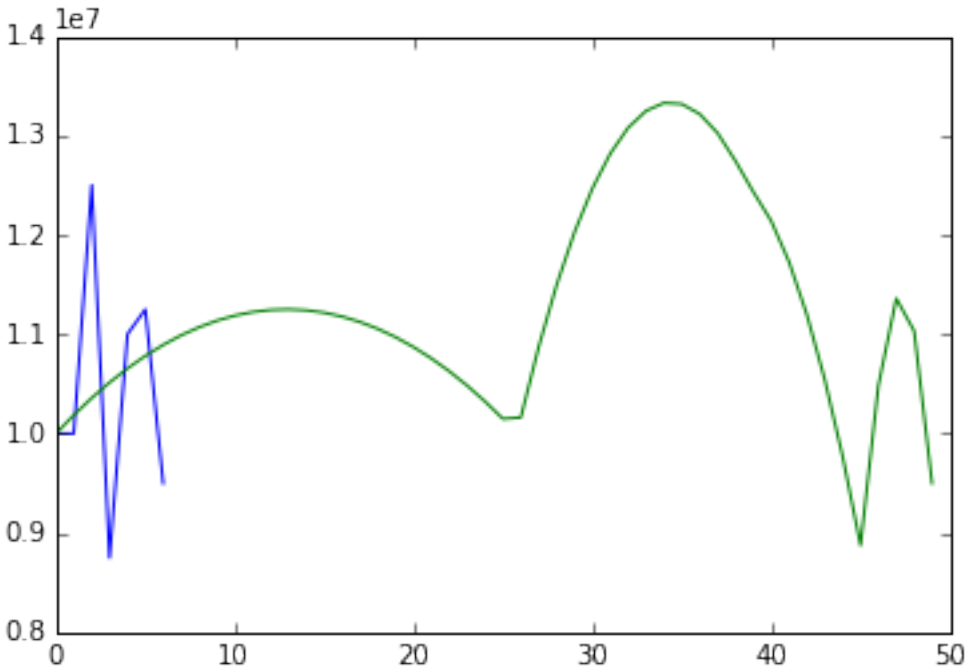
Out[23]: [<matplotlib.lines.Line2D at 0x112096210>]



```
In [130]: y_new = np.interp(x_new, SALES, PROFIT)

In [136]: PROFIT

Out[136]: [500, 1000, 2500, 3500, 5500, 7500, 9500]

In [143]: from scipy.interpolate import interp1d
          f2 = interp1d(SALES, PROFIT, kind='linear')

In [145]: plt.plot(SALES, PROFIT)
          plt.plot(x_new, f2(x_new))

Out[145]: [<matplotlib.lines.Line2D at 0x10a97d890>]
```




```
In [150]: plt.plot(REV)
          REV_regression = np.multiply(x_new,f2(x_new))
          plt.plot( REV_regression)

Out[150]: [<matplotlib.lines.Line2D at 0x10b8c84d0>]
```



In [ ]:

In [ ]: