2.



3.

(a)

(b)

(c)

4.

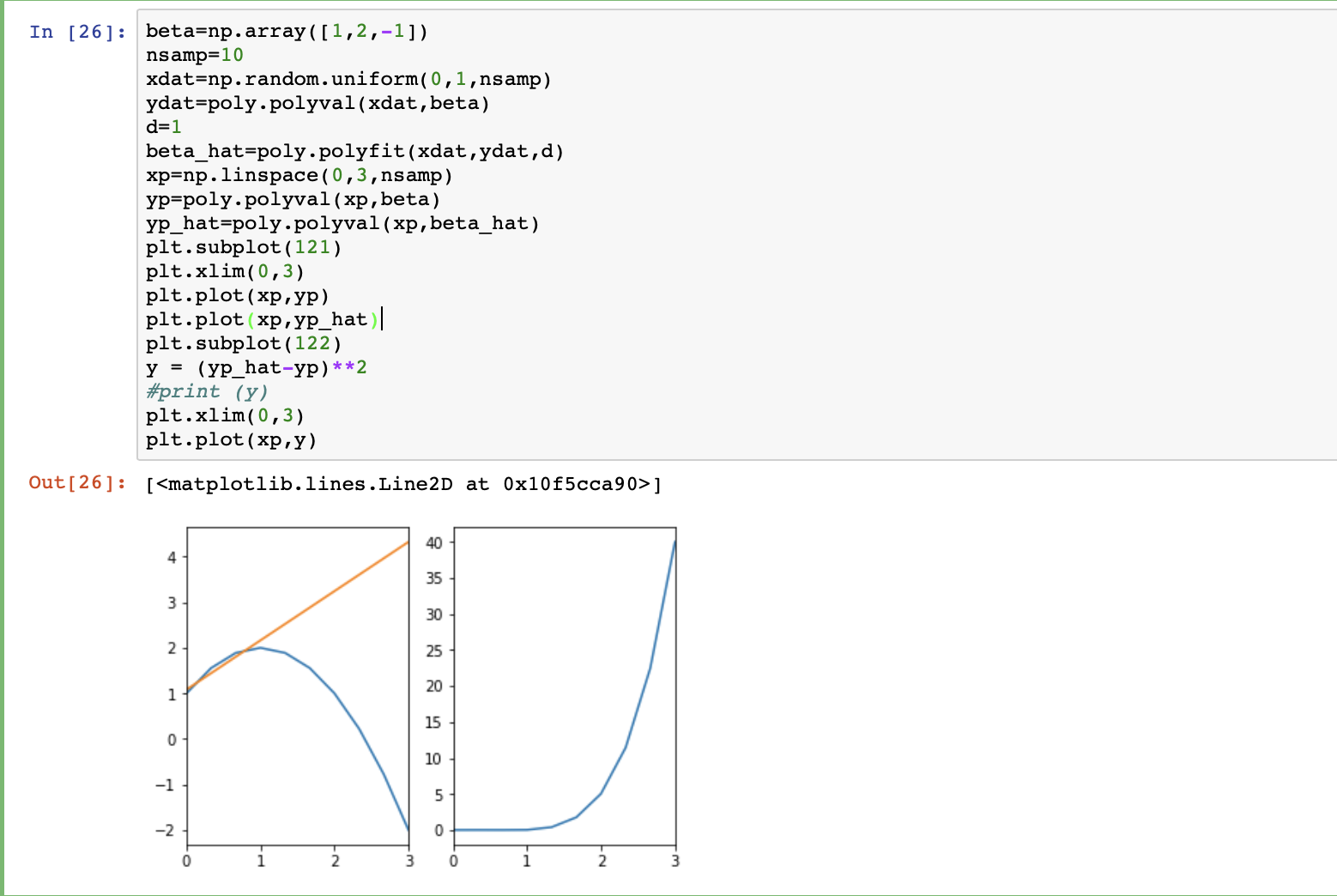
(a)

Let and both equal to zero to calculate and

(b)

In the same way to calculate , let and both equal to zero.

(c)(d)



so when x=3, will be largest.

5.(a) : cancer volume

age

: cancer type

Model 1:

Mode12:

Model3: , and are binary features

Type I:

Type II:

(b) Model 1 has two parameters

Model 2 has three parameters

Model 3 has three parameters

Model 3 is the most complex.

(c)Model 1:

Model 2:

Model 3:

(d)Rsq\_tgt = 0.7 +0.05/ =0.7171

Mode13’s Rss\_mean is less than Rsq\_tgt , so we can choose model 3.