PS8

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1 Introduction

5.) The data seems to be pretty close to the true beta numbers that we had in (1) depending on how close your measure would be. It overshot the estimate though. 7.) Yes they are different, but only slightly, it looks like the Nelder-Mead was better in the tens or hundreds of thousandths place. 9.)

Dep. Variable:	y	**R-squared:**	1.000
Model:	OLS	**Adj. R-squared:**	1.000
Method:	Least Squares	**F-statistic:**	5.216e+07
Date:	Tue, 04 Apr 2023	**Prob (F-statistic):**	0.00
Time:	12:30:52	**Log-Likelihood:**	1.2102e+05
No. Observations:	100000	**AIC:**	-2.420e+05
Df Residuals:	99990	**BIC:**	-2.419e+05
Df Model:	9		
Covariance Type:	nonrobust		

	coef	**std err**	**t**	**P> |t|**	**[0.025**	**0.975]**
const	1.6250	0.000	7122.372	0.000	1.625	1.625
x1	-1.0001	0.000	-4382.439	0.000	-1.001	-1.000
x2	-0.2498	0.000	-1098.996	0.000	-0.250	-0.249
x3	0.7503	0.000	3283.581	0.000	0.750	0.751
x4	3.5003	0.000	1.53e+04	0.000	3.500	3.501
x5	-1.9999	0.000	-8756.644	0.000	-2.000	-1.999
x6	0.5001	0.000	2186.605	0.000	0.500	0.501
x7	1.0004	0.000	4375.254	0.000	1.000	1.001
x8	1.2501	0.000	5493.186	0.000	1.250	1.251
x9	2.0000	0.000	8775.692	0.000	2.000	2.000

Omnibus:	85278.853	**Durbin-Watson:**	2.000
Prob(Omnibus):	0.000	**Jarque-Bera (JB):**	5957.972
Skew:	0.002	**Prob(JB):**	0.00
Kurtosis:	1.804	**Cond. No.**	1.02

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.