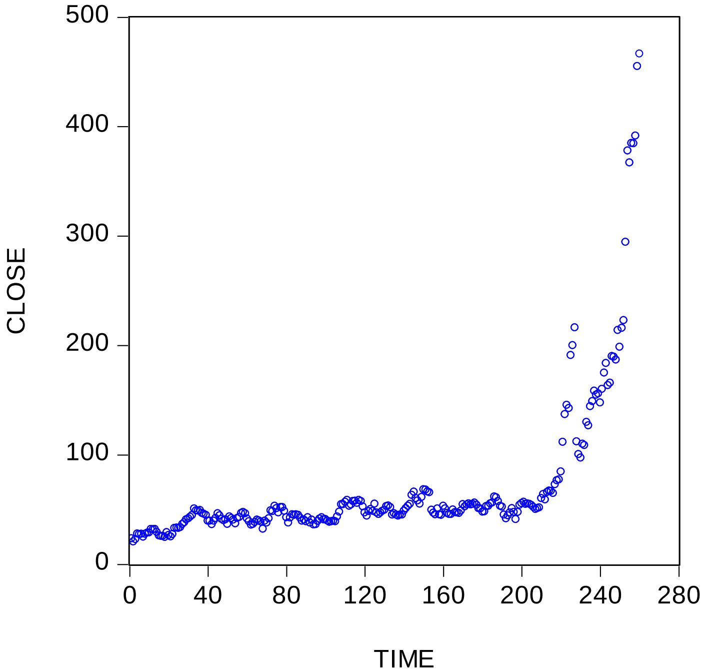
5.25

a.



从散点图中可以看出，时间和收盘价格之间的关系为正相关关系。

b.

Dependent Variable: CLOSE
Method: Least Squares
Date: 11/17/20 Time: 00:21
Sample: 1/03/1995 12/20/1999
Included observations: 260

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4.694060	6.881046	-0.682172	0.4957
TIME	0.580514	0.045708	12.70052	0.0000

R-squared	0.384693	Mean dependent var	71.06296
Adjusted R-squared	0.382308	S.D. dependent var	70.38357
S.E. of regression	55.31681	Akaike info criterion	10.87169
Sum squared resid	789467.0	Schwarz criterion	10.89908
Log likelihood	-1411.320	Hannan-Quinn criter.	10.88270
F-statistic	161.3032	Durbin-Watson stat	0.048284
Prob(F-statistic)	0.000000		

$$\widehat{CLOSE_i} = -4.6941 + 0.5805 \times TIME_i$$

c.

Dependent Variable: CLOSE
Method: Least Squares
Date: 11/17/20 Time: 00:28
Sample: 1/03/1995 12/20/1999
Included observations: 260

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	72.68253	8.146947	8.921444	0.0000
TIME	-1.191469	0.144139	-8.266139	0.0000
TIME^2	0.006789	0.000535	12.69373	0.0000

R-squared	0.621808	Mean dependent var	71.06296
Adjusted R-squared	0.618865	S.D. dependent var	70.38357
S.E. of regression	43.45212	Akaike info criterion	10.39267
Sum squared resid	485238.3	Schwarz criterion	10.43375
Log likelihood	-1348.047	Hannan-Quinn criter.	10.40918
F-statistic	211.2743	Durbin-Watson stat	0.076576
Prob(F-statistic)	0.000000		

$$\widehat{CLOSE_i} = 72.68253 - 1.191469 \times TIME_i + 0.006789 \times TIME_i^2$$

从回归结果中可以看出，时间的系数为-1.191469，p 值小于 0.05，说明在 95%置信水平下是显著的。时间的二次方的系数 0.006789，p 值小于 0.05，说明在 95%置信水平下是显著的。调整后的可决系数为 0.6189，模型整体拟合效果较好。

d.

Dependent Variable: CLOSE
Method: Least Squares
Date: 11/17/20 Time: 00:45
Sample: 1/03/1995 12/20/1999
Included observations: 260

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-10.85435	7.669922	-1.415183	0.1582
TIME	2.612844	0.254008	10.28646	0.0000
TIME^2	-0.029581	0.002259	-13.09381	0.0000
TIME^3	9.29E-05	5.69E-06	16.32563	0.0000

R-squared	0.814713	Mean dependent var	71.06296
Adjusted R-squared	0.812542	S.D. dependent var	70.38357
S.E. of regression	30.47358	Akaike info criterion	9.686863
Sum squared resid	237731.7	Schwarz criterion	9.741642
Log likelihood	-1255.292	Hannan-Quinn criter.	9.708885
F-statistic	375.2138	Durbin-Watson stat	0.149552
Prob(F-statistic)	0.000000		

$$\widehat{CLOSE_i} = 72.68253 - 1.191469 \times TIME_i + 0.006789 \times TIME_i^2 + 0.0000929 \times TIME_i^3$$

从回归结果中可以看出，时间的系数、时间的二次方的系数和时间的三次方的系数，p 值均小于 0.05，说明在 95%置信水平下都是显著的。调整后的可决系数为 0.812542，模型整体拟合效果较好。通过三个模型调整后的可决系数的比较，三次模型的拟合效果较好。