1)

b) Coefficients:

(Intercept) lag.quarterly.revenue price.index

-10.4726 0.1239 -0.7542

income.level market.potential

0.7675 1.3306

Y=-10.4726+0.1239x1-0.7542x2+0.7675x3+1.3306x4

c)

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) -10.4726 6.0217 -1.739 0.0911 .

lag.quarterly.revenue 0.1239 0.1424 0.870 0.3904

price.index -0.7542 0.1607 -4.693 4.28e-05 \*\*\*

income.level 0.7675 0.1339 5.730 1.93e-06 \*\*\*

market.potential 1.3306 0.5093 2.613 0.0133 \*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.01473 on 34 degrees of freedom

Multiple R-squared: 0.9981, Adjusted R-squared: 0.9978

F-statistic: 4354 on 4 and 34 DF, p-value: < 2.2e-16

Price.index,income.level,market.potential are the significant variables that affect y

d) Coefficients:

(Intercept) price.index income.level market.potential

-13.3101 -0.8349 0.8456 1.6273

Y=-13.3101-0.8349x1+0.8456x2+1.6273x3

e) For model 1 Multiple R-squared: 0.9981

For model 2 Multiple R-squared: 0.998

Using R-squared model 1 is more significant



g) -1.971415e-19

We can see that the error mean is minimum

2)

a) Coefficients:

(Intercept) Product.Stocked Distance

2.26019 1.62212 0.01434

Y=2.26019+1.62212x1+0.01434x2

b) Residuals:

Min 1Q Median 3Q Max

-5.7803 -1.1060 0.2577 1.3778 7.3755

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 2.260192 1.148385 1.968 0.062395 .

Product.Stocked 1.622117 0.175419 9.247 7.49e-09 \*\*\*

Distance 0.014343 0.003692 3.885 0.000854 \*\*\*

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 3.328 on 21 degrees of freedom

Multiple R-squared: 0.9592, Adjusted R-squared: 0.9553

F-statistic: 246.9 on 2 and 21 DF, p-value: 2.576e-15

We can see that Product.Stock and Distance are significant at 5%

d)



All three variables have outliers



Product and Delivery.Time and Distance and Delivery.Time have linear relationship

e)



e) and f) From Q-Q plot we observe that the points are deviating from the straight line, hence the errors does not follow normal distribution