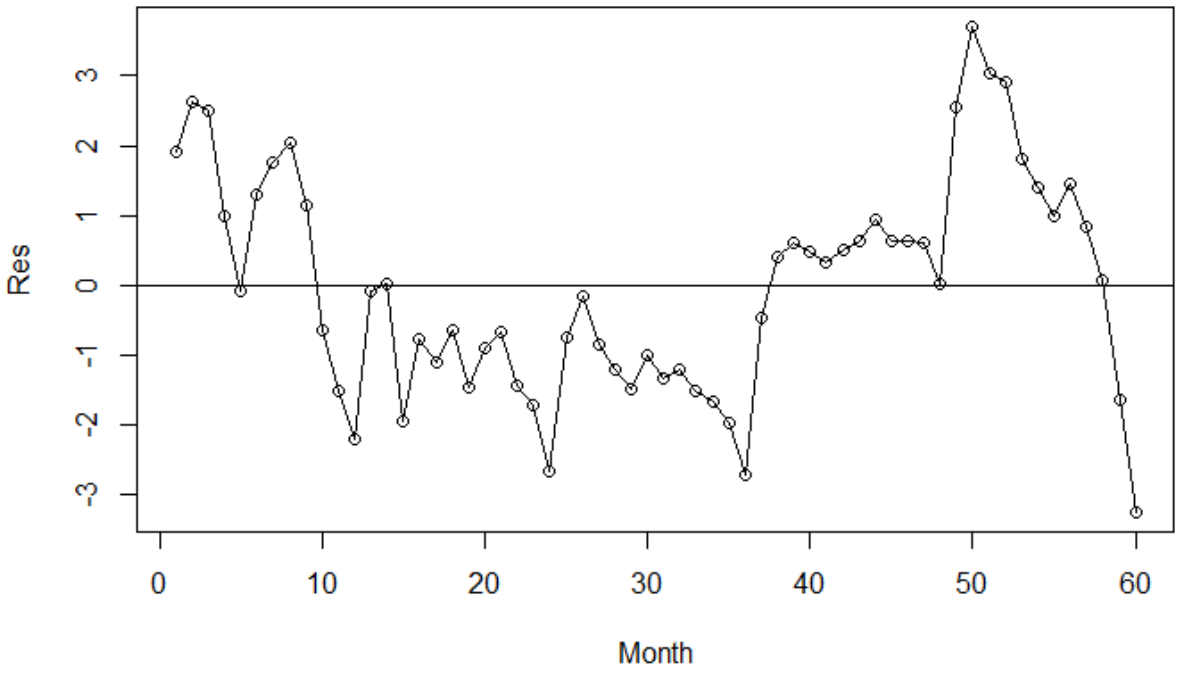
Question 1



A.

a. Over time there tends to be a positive correlation

B.

```
 lag Autocorrelation D-W Statistic p-value
   1        0.772038     0.3592396       0
 Alternative hypothesis: rho > 0
```

a. With a p-value of 0, we can reject the null hypothesis and surmise that a positive correlation exists within the model.

C.

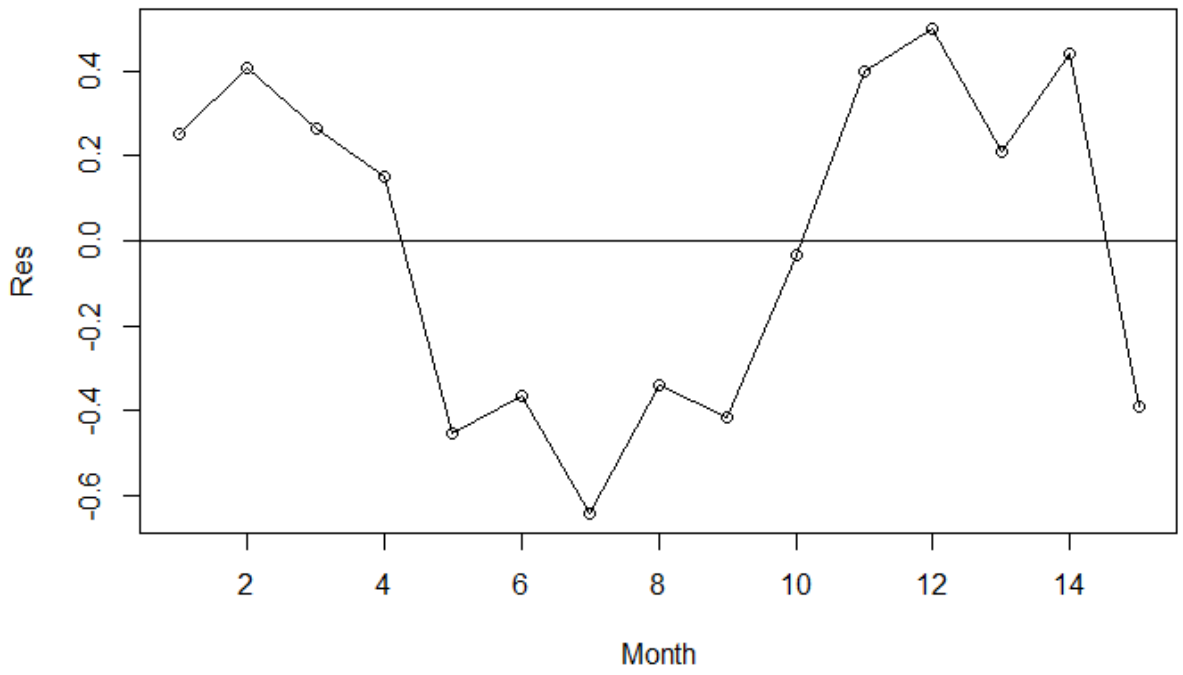
```
             Estimate Std. Error t value  Pr(>|t|)
(Intercept) 39.623789   5.958102   6.650 1.214e-08 ***
vendor       0.021390   0.012691   1.685   0.09737 .
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.6515 on 57 degrees of freedom
Multiple R-squared:  0.0475 ,  Adjusted R-squared:  0.0308
F-statistic: 2.8 on 1 and 57 DF,  p-value: < 9.737e-02

Durbin-Watson statistic
(original):    0.35924 , p-value: 2.309e-17
(transformed): 1.86449 , p-value: 2.909e-01
> |
```

D. After the data has been transformed the p-value is 0.2909. There is not enough evidence to conclude that autocorrelation exists at 0.05 significance level.

Question 2



A.

a. Over time there tends to be a positive correlation

B. The Durbin-Watson test results conclude that the data provide sufficient evidence to reject the null hypothesis with a p-value of 0.001. There is in fact a positive correlation.

a.

```
 lag Autocorrelation D-W Statistic p-value
   1       0.5410964     0.8182972   0.004
 Alternative hypothesis: rho > 0
Call:
lm(formula = Share ~ Price, data = df)

             Estimate Std. Error t value  Pr(>|t|)
(Intercept) 26.611277   1.113022  23.909 1.719e-11 ***
Price       -0.115793   0.012955  -8.938 1.188e-06 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.2999 on 12 degrees of freedom
Multiple R-squared:  0.8694 ,  Adjusted R-squared:  0.8585
F-statistic: 79.9 on 1 and 12 DF,  p-value: < 1.188e-06

Durbin-Watson statistic
(original):    0.81830 , p-value: 1.563e-03
(transformed): 0.85205 , p-value: 1.243e-02
```

C. From the results above after one iteration the p-value is 0.01243. There is enough evidence for a positive correlation at 0.05 significance level.