Q4

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Q.4 Solution

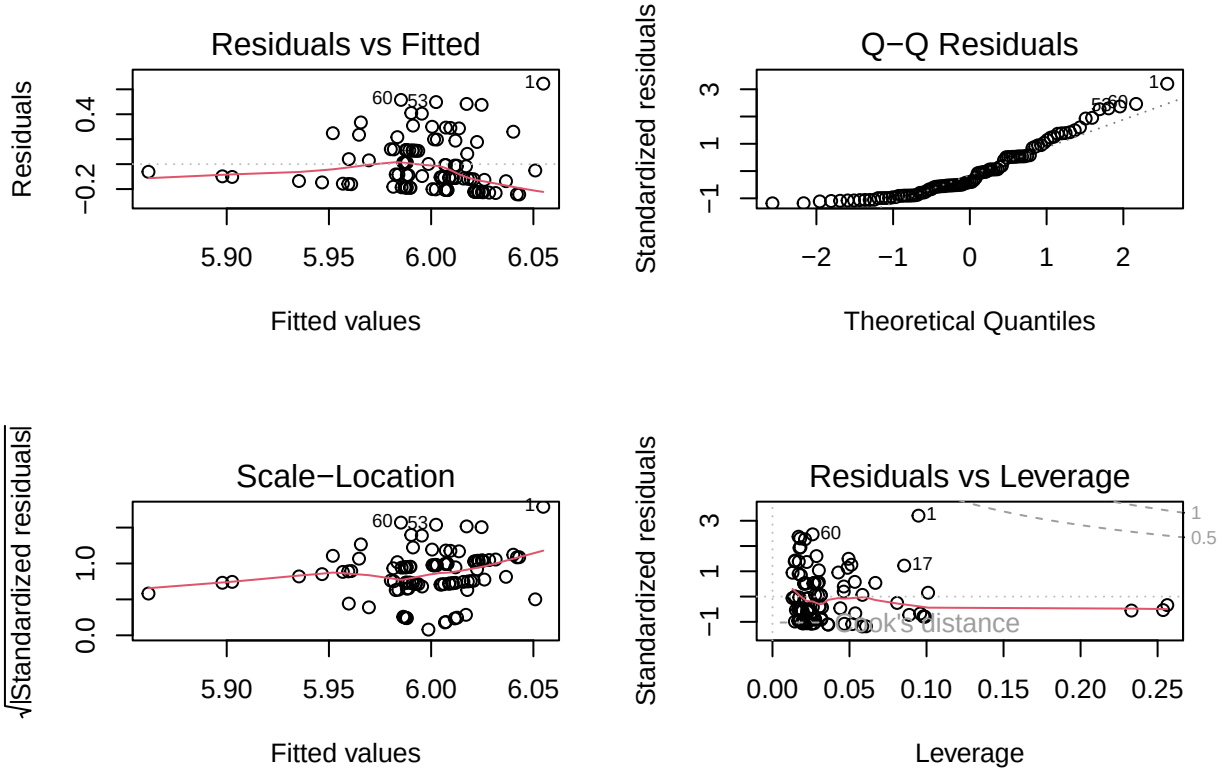
```
library("readxl")
data<-read_excel("D:/BSDS/Statistics 3/earthquake.xlsx")
```

```
## New names:
## * `` -> `...1`
```

```
head(data)
```

```
## # A tibble: 6 x 5
##    ...1 depth latitude longitude magnitude
##   <dbl> <dbl>    <dbl>     <dbl>     <dbl>
## 1     1    33    -52.3    -152.        6.7
## 2     2    36     45.5     -29.1       5.8
## 3     3    57     41.8     -37.2       5.8
## 4     4    67     29.2     -38.8       6.2
## 5     5    30    -21.7     -10.2       6
## 6     6     0     23.1     -59.4       6.2
```

```
lmod<-lm(magnitude~latitude+longitude+depth,data=data)
par(mfrow=c(2,2))
plot(lmod)
```



Comment on the diagnostic plots

1. Residual vs Fitted: The plot shows a fairly random scatter of residuals around the horizontal line. There's no strong pattern in the residuals.
2. Normal Q-Q plot: Most points fall along the 45 degree referenced line with slight deviations at the tails. We can say that the residuals are approximately normally distributed and slight deviations at the tail may indicate mild skewness.
3. Scale-location: We do not see a strong pattern which indicates that the variance of the residuals is relatively constant.
4. Residuals vs Leverage: There is no standardized residual extreme enough to call an outlier.