

B. 20 books published in recent year were randomly selected in a bookshop. Number of pages were counted for each book and the age of the author was retrieved. The resulting data were as following:

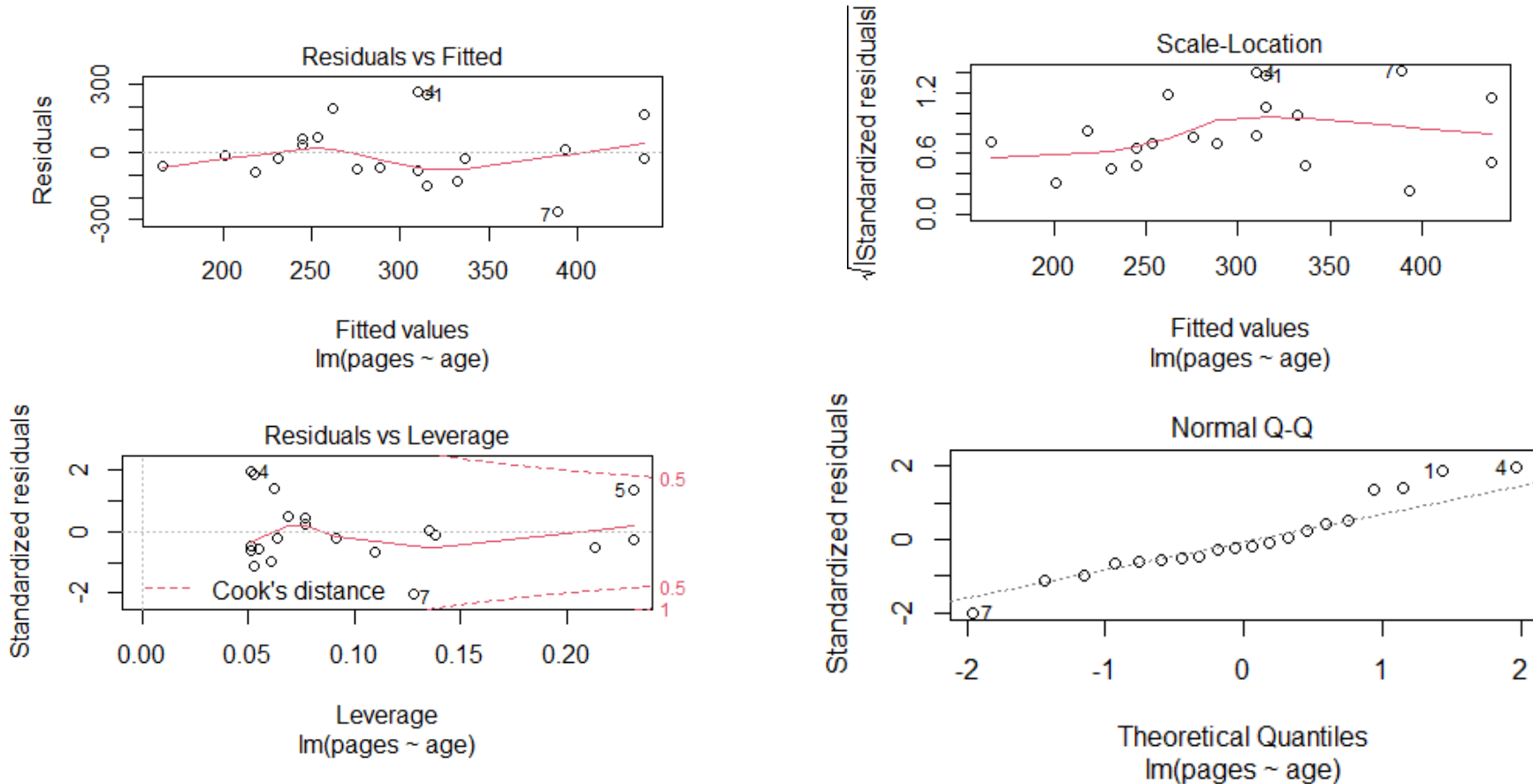
author age	number of pages
57	568
41	302
23	102
56	574
85	600
57	162
74	128
85	405
61	201
35	129
38	204
62	305
45	450
41	275
43	320
75	401
56	230
51	222
31	188
48	196

Does the author age have an affect on thickness of books?  
Perform a statistical analysis and illustrate it with a figure.

```
books<-read.delim2("clipboard")
```

The null hypothesis – the author's age does not have an affect on thickness of book

```
lm.b<-lm(pages~age, data=books)  
plot(lm.b)
```



```
summary(lm.b)
```

```
Call:
```

```
lm(formula = pages ~ age, data = books)
```

```
Residuals:
```

```
      Min       1Q   Median       3Q      Max
-261.17  -79.59  -29.59   59.63  263.64
```

```
Coefficients:
```

```
              Estimate Std. Error t value Pr(>|t|)
(Intercept)    65.170    103.341   0.631   0.5362
age              4.378     1.853   2.363   0.0296 *
```

```
---
```

```
Signif. codes:
```

```
0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Residual standard error: 138.5 on 18 degrees of freedom
```

```
Multiple R-squared:  0.2367,    Adjusted R-squared:  0.1943
```

```
F-statistic: 5.581 on 1 and 18 DF,  p-value: 0.02962
```

The null hypothesis is rejected = the author's age does have an affect on thickness of book

```
ggplot(books, aes(x=age,  
y=pages))+geom_point()+geom_smooth(method="lm",  
colour=6)+theme_classic()
```

