

**General Objective:** To determine the significance in vendor selection when purchasing Fantasy books online.

**Vendors Being Observed:**



All data has been taken from the vendor's websites:

[www.bn.com](http://www.bn.com)

[www.amazon.com](http://www.amazon.com)

[www.borders.com](http://www.borders.com)

**Specific Objectives / Key Questions & Answers:**

- Does there appear to be a significant difference in the prices of books between the three selected vendors (Barnes & Noble, Amazon & Borders)?

**No:** There does not appear to be a significant difference in the prices of books between the three vendors based on the studies which follow. While there is a difference between the prices for most of the individual books studied, there is not strong proof statistically for variance between the vendors. This holds true for an analysis which includes the factor of Publication Year. My best advice to an individual buying books online would be to compare the prices between the three sites at the time of purchase, as the statistical analysis has shown no clear cut differences between the vendors. Based strictly on the means one could safely choose to buy from Amazon in a rush, but it is wise to simply take the time to check each website.

a. Whose books are the overall cheapest, highest, etc?

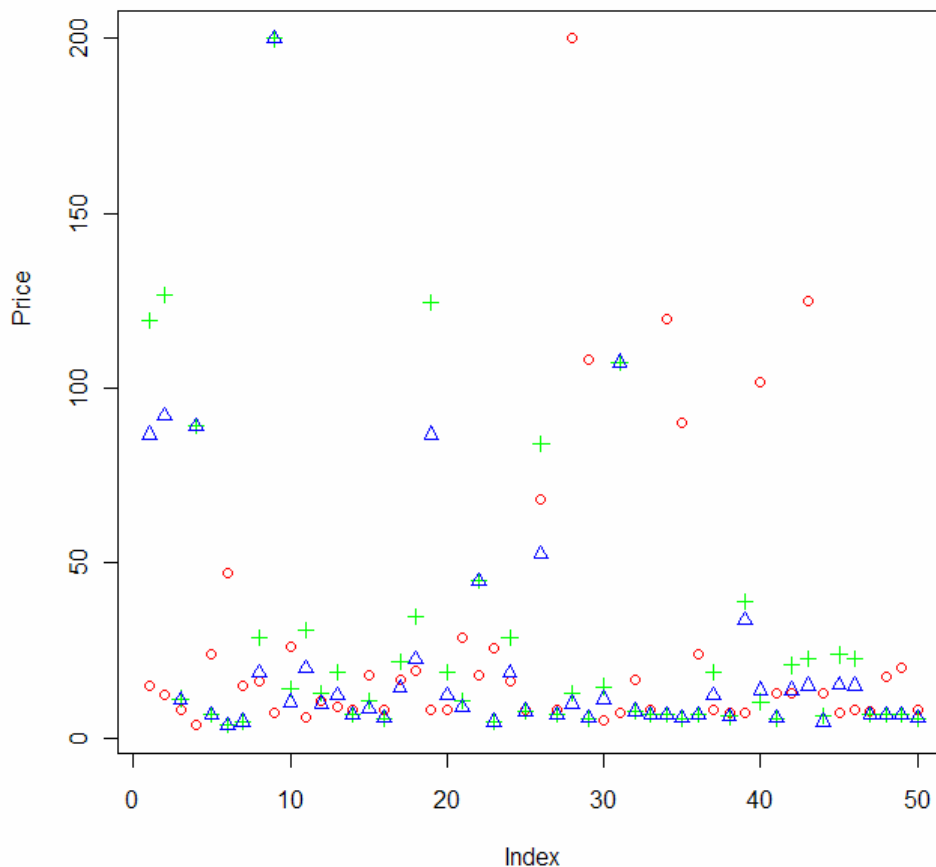
One of the most significant results found was through a simple summary of each data set.

```
> summary(Barnes_Nobel_Price)
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
 3.55   7.99   12.59   27.81  22.97  200.00
> summary(Amazon_Price)
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
 4.99   7.99   11.38   25.07  18.95  200.00
> summary(Borders_Price)
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
 4.99   7.99   13.27   30.22  28.71  200.00
> summary(Average_Price_in_Range)
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
 4.75   7.99   12.16   26.44  20.96  200.00
```

By looking at the means for each vender and the average of all vender prices we find that Barnes and Nobel has a mean price relatively the same as the overall average price, Amazon has a mean slightly lower than the overall average and Borders a slightly higher mean.

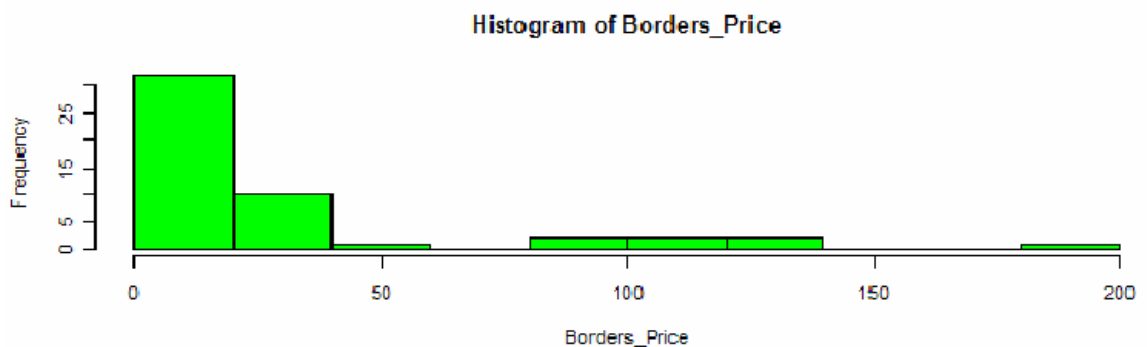
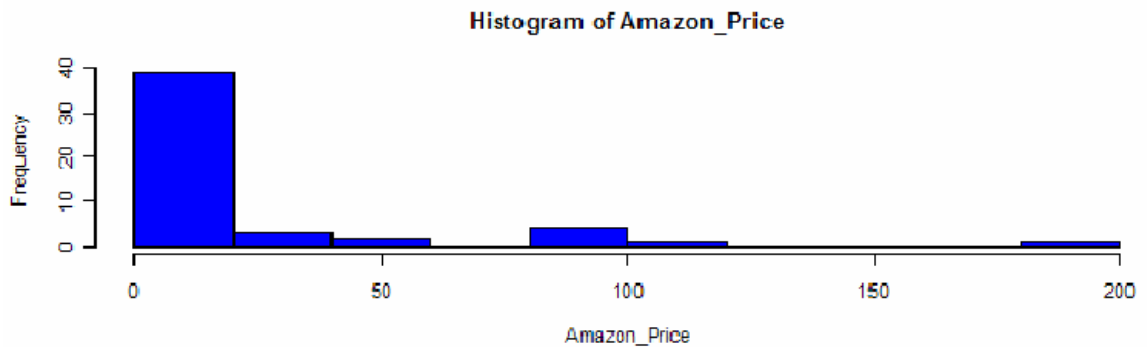
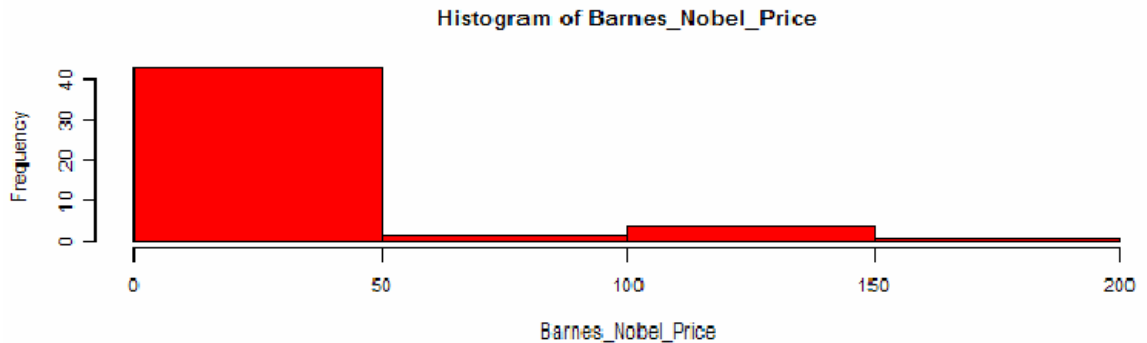
The below graph depicts the distribution of the prices. Note that Red = Barnes & Nobel, Blue = Amazon, Green = Borders. It is somewhat clear from the graph that the means would be distributed as discussed above. [For non-superimposed graphs, see the Other graphs section]

**Prices of Books**



The histograms which follow show us that there is relatively little difference in the prices between the three vendors. Though the differences in means do exist, they are not extreme.

```
> par(mfrow = c(3,1))
> hist(Barnes_Nobel_Price, col = "Red")
> hist(Amazon_Price, col = "Blue")
> hist(Borders_Price, col = "Green")
```





The Below Stem Plots show a similar indication that there is no stark difference in the data received for each vendor.

```
> tmp = tapply(y, group, stem)
```

```
The decimal point is 1 digit(s) to the right of the |
```

```
0 | 45677777888888888888889123335566778889
2 | 044669
4 | 7
6 | 8
8 | 0
10 | 28
12 | 05
14 |
16 |
18 |
20 | 0
```

```
The decimal point is 1 digit(s) to the right of the |
```

```
0 | 5666777778888888888888990011222444556667
2 | 00145
4 | 64
6 |
8 | 8803
10 | 8
12 |
14 |
16 |
18 |
20 | 0
```

```
The decimal point is 1 digit(s) to the right of the |
```

```
0 | 56677777888888888888889922234456
2 | 000234450026
4 | 06
6 |
8 | 50
10 | 8
12 | 057
14 |
16 |
18 |
20 | 0
```

This is a stem plot just to give a clear view of all of the prices that have been collected.

```
> stem(y)

The decimal point is 1 digit(s) to the right of the |

 0 | 45556666666777777777777777777888888888888888888888888888888888888999999
 1 | 0011122222222333344444455555666666677788889
 2 | 0000001234444445669
 3 | 00256
 4 | 0667
 5 | 4
 6 | 8
 7 |
 8 | 588
 9 | 0003
10 | 2888
11 |
12 | 00557
13 |
14 |
15 |
16 |
17 |
18 |
19 |
20 | 000
```

Summary Statistics – to give a clear representation of the means that we are dealing with as well as sum, var & n

```
> tmpfn = function(x) c(sum=sum(x), mean = mean(x), var = var(x), n = length(x))
> tapply(y, group, tmpfn)
$`1`
```

	sum	mean	var	n
\$`1`	1390.4900	27.8098	1566.2108	50.0000

```
$`2`
```

	sum	mean	var	n
\$`2`	1253.6900	25.0738	1313.6478	50.0000

```
$`3`
```

	sum	mean	var	n
\$`3`	1511.1900	30.2238	1673.1497	50.0000

Summary information for whole data set.

```
> tmpfn(y)
      sum      mean      var      n
4155.37000  27.70247 1501.75388 150.00000
```

**Analysis of Variance:**

The analysis of variance for the vendors as shown below proved insignificant, indicating a clear lack of difference between the prices obtained from each vendor.

```
> data = data.frame(y = y, group = factor(group))
> fit = lm(y ~ group, data)
> anova(fit)
Analysis of Variance Table
```

```
Response: y
          Df Sum Sq Mean Sq F value Pr(>F)
group      2     664      332  0.2187 0.8038
Residuals 147 223097     1518
```

The “Confidence Interval on Pooled Variance” Is fairly massive this indicates that there is a low likelihood of variance.

```
> anova(fit)["Residuals", "Sum Sq"]/qchisq(c(0.025, 0.975), 147, lower.tail = FALSE)
[1] 1222.727 1934.492
```

Note: The below summary of “fit” shows that the vendors have no effect on each other.

```
> summary(fit)
```

Call:

```
lm(formula = y ~ group, data = data)
```

Residuals:

```
      Min       1Q   Median       3Q      Max
-25.234 -19.820 -15.072  -5.244  174.926
```

Coefficients:

```
              Estimate Std. Error t value Pr(>|t|)
(Intercept)   27.810      5.509   5.048 1.30e-06 ***
group2        -2.736      7.791  -0.351   0.726
group3         2.414      7.791   0.310   0.757
---

```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

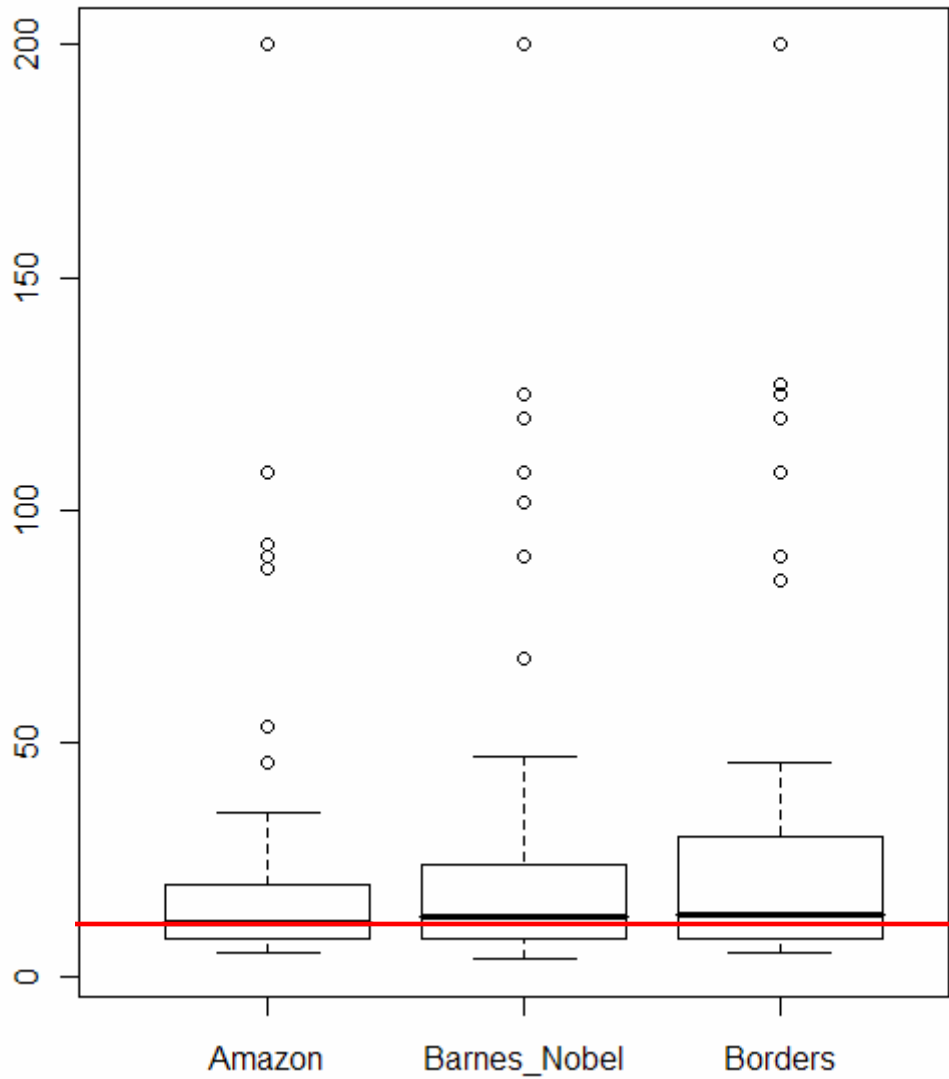
Residual standard error: 38.96 on 147 degrees of freedom

Multiple R-squared: 0.002967, Adjusted R-squared: -0.0106

F-statistic: 0.2187 on 2 and 147 DF, p-value: 0.8038

A Boxplot further helps us to visualize the spread of the data among the three vendors. It is clear that the three vendor's behaviors are very similar. Their means are nearly equivalent as was seen in the previous analysis. It appears that Barnes & Nobel has more books in the mid range of \$75-100.

**Boxplot for 3 Sellers**





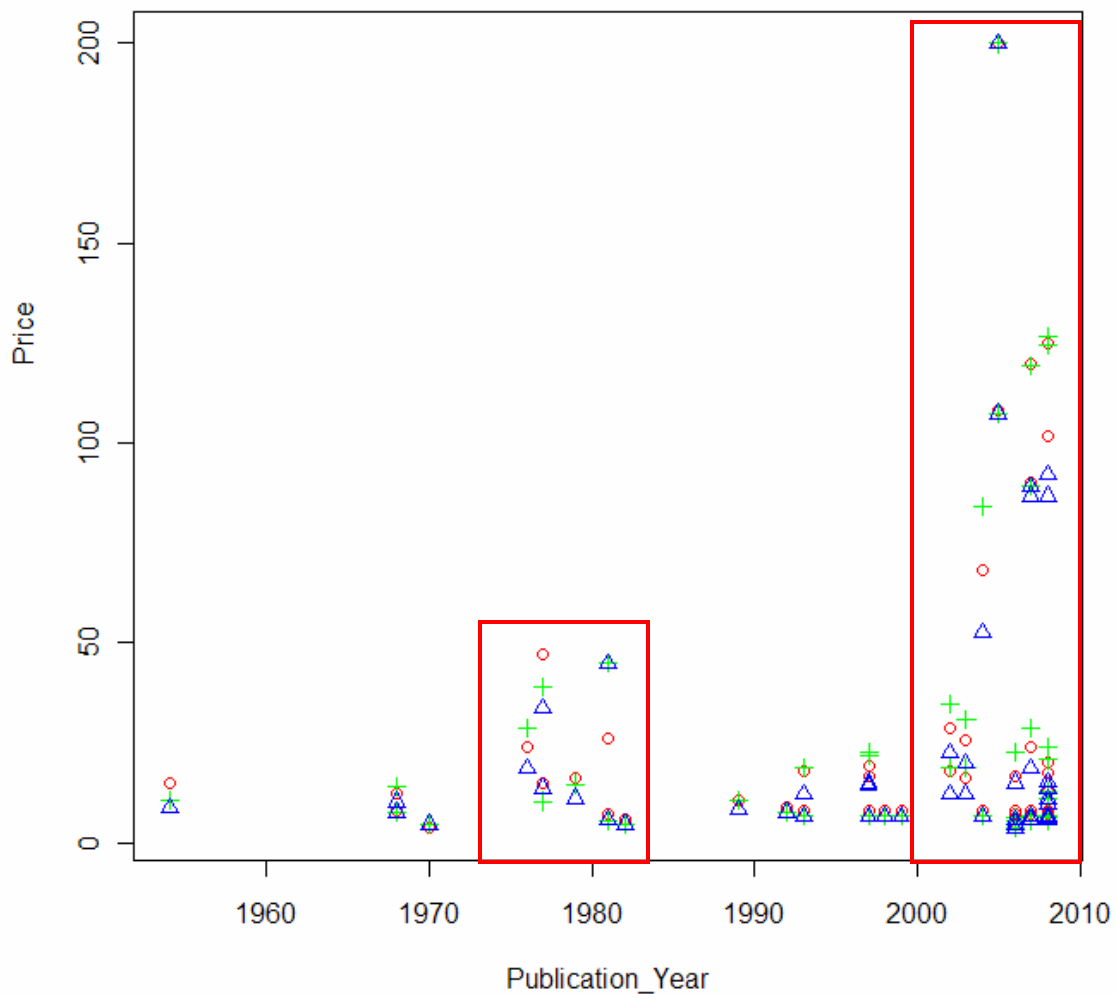
Does publication date have a significant effect on the differences in the prices of books among the three vendors in this study?

From the initial general plot of Publication\_Year vs. each Vender, we might pre-assume that there will be little to no significance in publication year.



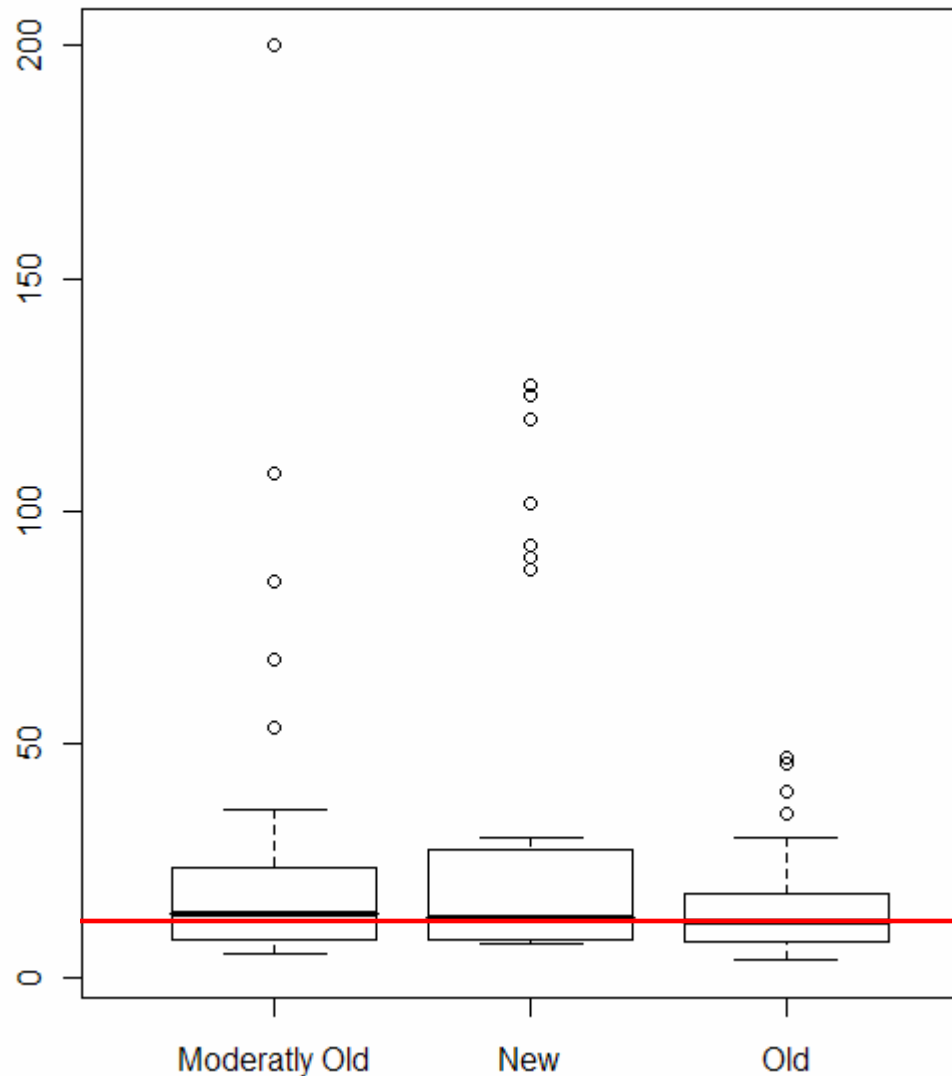
The below graph shows the prices of books vs. their publication year. Again, Red = Barnes & Nobel, Blue = Amazon, Green = Borders. Note: there appears to be an indication that prices are generally higher in recent years and that moderately older books around the time of 1980 are also a bit pricier. [For non-superimposed graphs, see the Other graphs section]

### Prices of Books vs. Publication Year



By classifying each book as either Old, Moderately Old or New the below Boxplot was created to give a visualization of the data. It is obvious that there is very little overall change in the price of books based on age.

### Boxplot for Book Ages



- Does the price range of the book have an effect on variance in price between vendors? (Or in other words, is there more variance between vendors for books in the range of \$10, \$20, \$100, etc.)
  - a. No, Given that the price histogram followed the individual histograms of each vendor it is easy to see that there is also insignificant difference based on price range.

**Methods Which Were Used:**

- General data analysis & comparisons
- Histograms
- Stem plots
- Scatter Plots
- Boxplots
- Analysis of both categorical and quantitative variables
- Regression Analysis
- One-Way ANOVA test
- T-tests

**Data Set:****Table v1:**

<b>Title</b>	<b>Barnes_Nobel _Price</b>	<b>Amazon Price</b>	<b>Borders_ Price</b>	<b>Publication_ Year</b>	<b>Classification</b>	<b>Average_ Price_in_Range</b>	<b>Average_Price in_Range_ Rounded</b>
Acacia Audio	119.99	87.59	119.99	2007	New	103.79	110
All the Weyers of Pern	101.8	92.89	127.25	2008	New	97.345	110
Artemis Fowl: The Time Paradox	12.59	12.23	12.59	2008	New	12.41	20
Beguilement Audio	90	90	90	2007	New	90	90
Bitten	7.99	7.99	7.99	2004	Moderatly Old	7.99	10
book of Reality, The	4.99	4.99	4.99	2006	Moderatly Old	4.99	10
Canterville Ghost, The	3.55	5.95	5.95	1970	Old	4.75	10
Confessor	23.96	19.77	29.95	2007	New	21.865	30
Confusion, The	200	200	200	2005	Moderatly Old	200	200
Corduroy	12.23	11.55	15.29	1968	Old	11.89	20
Dark Tower Box Set, The	25.56	21.09	31.96	2003	Moderatly Old	23.325	30
Fire Study	12.55	11.16	13.95	2008	New	11.855	20
Forgotten Realms	15.96	13.57	19.95	2003	Moderatly Old	14.765	20
Game of Thrones, The	7.99	7.99	7.99	1997	Moderatly Old	7.99	10
Grendel	10.75	9.56	11.95	1989	Old	10.155	20
Harold & the Purple Crayon	6.99	6.99	6.99	1981	Old	6.99	10
Harry Potter and the Sorcerers Stone	16.55	15.63	22.99	1997	Moderatly Old	16.09	20
His Dark Materials Box Set	28.68	23.66	35.85	2002	Moderatly Old	26.17	30
His Majesty's Dragon	125	87.5	125	2008	New	106.25	120
Hitchhiker's Guide to the Galaxy	18	13.6	20	2002	Moderatly Old	15.8	20
Horton Hears a Who!	14.95	10.17	11.96	1954	Old	12.56	20
Immortal Wound	25.99	45.89	46	1981	Old	35.94	40
Indian in the Cupboard, The	5.99	5.99	5.99	1982	Old	5.99	10
Interview with the Vampire	23.96	19.77	29.95	1976	Old	21.865	30
Lion the Witch and the Wardrobe, The	8.99	8.99	8.99	1992	Moderatly Old	8.99	10

Lord of the Rings 50 An Addition, The	68	53.55	85	2004	Moderatly Old	60.775	70
Macician : Apprentice	7.99	7.99	7.99	1993	Moderatly Old	7.99	10
Mage's Daughter, The	12.6	11.2	14	2008	New	11.9	20
Magic Burns	6.99	6.99	6.99	2008	New	6.99	10
Magic Porridge Pot, The	16	12.48	16	1979	Old	14.24	20
Magic Time	108	108	108	2005	Moderatly Old	108	110
Magical Monarch of Mo and His People, The	8.06	8.95	8.95	1968	Old	8.505	10
Midnight's Daughter	7.99	7.99	7.99	2008	New	7.99	10
Neverwhere	7.99	7.99	7.99	1999	Moderatly Old	7.99	10
Nightlife	6.99	6.99	6.99	2006	Moderatly Old	6.99	10
Princess Bride, The	8	8	8	2007	New	8	10
Sandman, The	17.99	13.59	19.99	1993	Moderatly Old	15.79	20
Shadows Return	7.5	7.5	7.5	2008	New	7.5	10
So the Witch Won't Eat Me	46.95	34.95	40	1977	Old	40.95	50
Space Oddysseys of Aurther C. Clarke, The	14.95	14.95	11.7	1977	Old	14.95	20
Stray	6.99	6.99	6.99	2007	New	6.99	10
Sugar Queen, The	17.6	14.96	22	2008	New	16.28	20
Sword of Truth Boxed Set	16.77	16.3	23.97	2006	Moderatly Old	16.535	20
Twilight	7.99	6.04	7.69	2006	Moderatly Old	7.015	10
Victory of Eagles	20	16.5	25	2008	New	18.25	30
Wheel of Time Boxed Set, The	19.17	16.3	23.97	1997	Moderatly Old	17.735	20
Wicked/Son of a Witch	7.99	7.99	7.99	2008	New	7.99	10
Witches of Eleanan	7.99	7.99	7.99	1998	Moderatly Old	7.99	10
Wizard of Earthsea, The	7.99	7.99	7.99	2004	Moderatly Old	7.99	10
Wrinkle in Time	6.99	6.99	6.99	2007	New	6.99	10

**Table v2:**

<b>Title</b>	<b>Price</b>	<b>Seller</b>	<b>Publication_Year</b>	<b>Classification</b>	<b>Average_Price_in_Range</b>	<b>Average_Price_in_Range_Rounded</b>
Canterville Ghost, The	3.55	Barnes_Nobel	1970	Old	3.55	10
book of Reality, The	4.99	Barnes_Nobel	2006	Moderatly Old	4.99	10
Indian in the Cupboard, The	5.99	Barnes_Nobel	1982	Old	5.99	10
Harold & the Purple Crayon	6.99	Barnes_Nobel	1981	Old	6.99	10
Nightlife	6.99	Barnes_Nobel	2006	Moderatly Old	6.99	10
Stray	6.99	Barnes_Nobel	2007	New	6.99	10
Wrinkle in Time	6.99	Barnes_Nobel	2007	New	6.99	10
Magic Burns	6.99	Barnes_Nobel	2008	New	6.99	10
Shadows Return	7.5	Barnes_Nobel	2008	New	7.5	10
Macician : Apprentice	7.99	Barnes_Nobel	1993	Moderatly Old	7.99	10
Game of Thrones, The	7.99	Barnes_Nobel	1997	Moderatly Old	7.99	10
Witches of Eleanan	7.99	Barnes_Nobel	1998	Moderatly Old	7.99	10
Neverwhere	7.99	Barnes_Nobel	1999	Moderatly Old	7.99	10
Bitten	7.99	Barnes_Nobel	2004	Moderatly Old	7.99	10
Wizard of Earthsea, The	7.99	Barnes_Nobel	2004	Moderatly Old	7.99	10
Twilight	7.99	Barnes_Nobel	2006	Moderatly Old	7.99	10
Midnight's Daughter	7.99	Barnes_Nobel	2008	New	7.99	10

Wicked/Son of a Witch	7.99	Barnes_Nobel	2008	New	7.99	10
Princess Bride, The	8	Barnes_Nobel	2007	New	8	10
Magical Monarch of Mo and His People, The	8.06	Barnes_Nobel	1968	Old	8.06	10
Lion the Witch and the Wardrobe, The	8.99	Barnes_Nobel	1992	Moderatly Old	8.99	10
Grendel	10.75	Barnes_Nobel	1989	Old	10.75	20
Corduroy	12.23	Barnes_Nobel	1968	Old	12.23	20
Fire Study	12.55	Barnes_Nobel	2008	New	12.55	20
Artemis Fowl: The Time Paradox	12.59	Barnes_Nobel	2008	New	12.59	20
Mage's Daughter, The	12.6	Barnes_Nobel	2008	New	12.6	20
Horton Hears a Who!	14.95	Barnes_Nobel	1954	Old	14.95	20
Space Oddysseys of Aurther C. Clarke, The	14.95	Barnes_Nobel	1977	Old	14.95	20
Forgotten Realms	15.96	Barnes_Nobel	2003	Moderatly Old	15.96	20
Magic Porridge Pot, The Harry Potter and the Sourcerers Stone	16	Barnes_Nobel	1979	Old	16	20
Sword of Truth Boxed Set	16.55	Barnes_Nobel	1997	Moderatly Old	16.55	20
Sugar Queen, The	16.77	Barnes_Nobel	2006	Moderatly Old	16.77	20
Sandman, The	17.6	Barnes_Nobel	2008	New	17.6	20
Hitchhiker's Guide to the Galaxy	17.99	Barnes_Nobel	1993	Moderatly Old	17.99	20
Wheel of Time Boxed Set, The	18	Barnes_Nobel	2002	Moderatly Old	18	20
Victory of Eagles	19.17	Barnes_Nobel	1997	Moderatly Old	19.17	20
Interview with the Vampire Confessor	20	Barnes_Nobel	2008	New	20	20
Dark Tower Box Set, The	23.96	Barnes_Nobel	1976	Old	23.96	30
Immortal Wound	23.96	Barnes_Nobel	2007	New	23.96	30
His Dark Materials Box Set	25.56	Barnes_Nobel	2003	Moderatly Old	25.56	30
So the Witch Won't Eat Me	25.99	Barnes_Nobel	1981	Old	25.99	30
Lord of the Rings 50 An Addition, The	28.68	Barnes_Nobel	2002	Moderatly Old	28.68	30
Beguilement Audio	46.95	Barnes_Nobel	1977	Old	46.95	50
All the Weyers of Pern	68	Barnes_Nobel	2004	Moderatly Old	68	70
Magic Time	90	Barnes_Nobel	2007	New	90	90
Acacia Audio	101.8	Barnes_Nobel	2008	New	101.8	110
His Majesty's Dragon	108	Barnes_Nobel	2005	Moderatly Old	108	110
Confusion, The	119.99	Barnes_Nobel	2007	New	119.99	120
Canterville Ghost, The	125	Barnes_Nobel	2008	New	125	130
book of Reality, The	200	Barnes_Nobel	2005	Moderatly Old	200	200
Indian in the Cupboard, The	5.95	Amazon	1970	Old	5.95	10
Harold & the Purple Crayon	4.99	Amazon	2006	Moderatly Old	4.99	10
Nightlife	5.99	Amazon	1982	Old	5.99	10
Stray	6.99	Amazon	1981	Old	6.99	10
Wrinkle in Time	6.99	Amazon	2006	Moderatly Old	6.99	10
Magic Burns	6.99	Amazon	2007	New	6.99	10
Shadows Return	6.99	Amazon	2008	New	6.99	10
Macician : Apprentice	7.5	Amazon	2008	New	7.5	10
Game of Thrones, The	7.99	Amazon	1993	Moderatly Old	7.99	10
Witches of Eleanan	7.99	Amazon	1997	Moderatly Old	7.99	10
	7.99	Amazon	1998	Moderatly Old	7.99	10

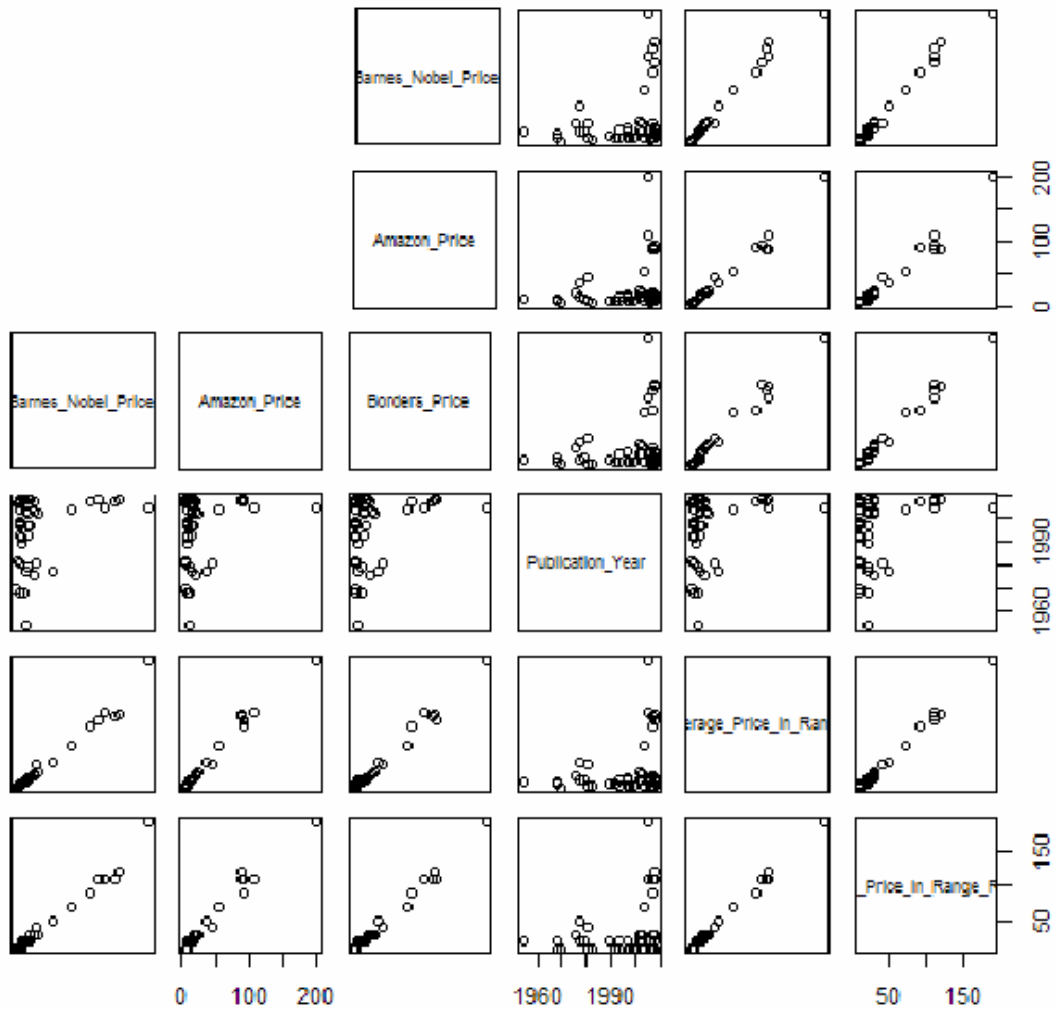
Neverwhere	7.99	Amazon	1999	Moderatly Old	7.99	10
Bitten	7.99	Amazon	2004	Moderatly Old	7.99	10
Wizard of Earthsea, The	7.99	Amazon	2004	Moderatly Old	7.99	10
Twilight	6.04	Amazon	2006	Moderatly Old	6.04	10
Midnight's Daughter	7.99	Amazon	2008	New	7.99	10
Wicked/Son of a Witch	7.99	Amazon	2008	New	7.99	10
Princess Bride, The	8	Amazon	2007	New	8	10
Magical Monarch of Mo and His People, The	8.95	Amazon	1968	Old	8.95	10
Lion the Witch and the Wardrobe, The	8.99	Amazon	1992	Moderatly Old	8.99	10
Grendel	9.56	Amazon	1989	Old	9.56	10
Corduroy	11.55	Amazon	1968	Old	11.55	20
Fire Study	11.16	Amazon	2008	New	11.16	20
Artemis Fowl: The Time Paradox	12.23	Amazon	2008	New	12.23	20
Mage's Daughter, The	11.2	Amazon	2008	New	11.2	20
Horton Hears a Who!	10.17	Amazon	1954	Old	10.17	20
Space Oddysseys of Aurther C. Clarke, The	14.95	Amazon	1977	Old	14.95	20
Forgotten Realms	13.57	Amazon	2003	Moderatly Old	13.57	20
Magic Porridge Pot, The	12.48	Amazon	1979	Old	12.48	20
Harry Potter and the Sourcerers Stone	15.63	Amazon	1997	Moderatly Old	15.63	20
Sword of Truth Boxed Set	16.3	Amazon	2006	Moderatly Old	16.3	20
Sugar Queen, The	14.96	Amazon	2008	New	14.96	20
Sandman, The	13.59	Amazon	1993	Moderatly Old	13.59	20
Hitchhiker's Guide to the Galaxy	13.6	Amazon	2002	Moderatly Old	13.6	20
Wheel of Time Boxed Set, The	16.3	Amazon	1997	Moderatly Old	16.3	20
Victory of Eagles	16.5	Amazon	2008	New	16.5	20
Interview with the Vampire	19.77	Amazon	1976	Old	19.77	20
Confessor	19.77	Amazon	2007	New	19.77	20
Dark Tower Box Set, The	21.09	Amazon	2003	Moderatly Old	21.09	30
Immortal Wound	45.89	Amazon	1981	Old	45.89	50
His Dark Materials Box Set	23.66	Amazon	2002	Moderatly Old	23.66	30
So the Witch Won't Eat Me	34.95	Amazon	1977	Old	34.95	40
Lord of the Rings 50 An Addition, The	53.55	Amazon	2004	Moderatly Old	53.55	60
Beguilement Audio	90	Amazon	2007	New	90	90
All the Weyers of Pern	92.89	Amazon	2008	New	92.89	100
Magic Time	108	Amazon	2005	Moderatly Old	108	110
Acacia Audio	87.59	Amazon	2007	New	87.59	90
His Majesty's Dragon	87.5	Amazon	2008	New	87.5	90
Confusion, The	200	Amazon	2005	Moderatly Old	200	200
Canterville Ghost, The	5.95	Borders	1970	Old	5.95	10
book of Reality, The	4.99	Borders	2006	Moderatly Old	4.99	10
Indian in the Cupboard, The	5.99	Borders	1982	Old	5.99	10
Harold & the Purple Crayon	6.99	Borders	1981	Old	6.99	10
Nightlife	6.99	Borders	2006	Moderatly Old	6.99	10
Stray	6.99	Borders	2007	New	6.99	10
Wrinkle in Time	6.99	Borders	2007	New	6.99	10

Magic Burns	6.99	Borders	2008	New	6.99	10
Shadows Return	7.5	Borders	2008	New	7.5	10
Macician : Apprentice	7.99	Borders	1993	Moderatly Old	7.99	10
Game of Thrones, The	7.99	Borders	1997	Moderatly Old	7.99	10
Witches of Eleanan	7.99	Borders	1998	Moderatly Old	7.99	10
Neverwhere	7.99	Borders	1999	Moderatly Old	7.99	10
Bitten	7.99	Borders	2004	Moderatly Old	7.99	10
Wizard of Earthsea, The	7.99	Borders	2004	Moderatly Old	7.99	10
Twilight	7.69	Borders	2006	Moderatly Old	7.69	10
Midnight's Daughter	7.99	Borders	2008	New	7.99	10
Wicked/Son of a Witch	7.99	Borders	2008	New	7.99	10
Princess Bride, The	8	Borders	2007	New	8	10
Magical Monarch of Mo and His People, The	8.95	Borders	1968	Old	8.95	10
Lion the Witch and the Wardrobe, The	8.99	Borders	1992	Moderatly Old	8.99	10
Grendel	11.95	Borders	1989	Old	11.95	20
Corduroy	15.29	Borders	1968	Old	15.29	20
Fire Study	13.95	Borders	2008	New	13.95	20
Artemis Fowl: The Time Paradox	12.59	Borders	2008	New	12.59	20
Mage's Daughter, The	14	Borders	2008	New	14	20
Horton Hears a Who! Space Odysseys of Aurther C. Clarke, The	11.7	Borders	1977	Old	11.7	20
Forgotten Realms	19.95	Borders	2003	Moderatly Old	19.95	20
Magic Porridge Pot, The	16	Borders	1979	Old	16	20
Harry Potter and the Sourcerers Stone	22.99	Borders	1997	Moderatly Old	22.99	30
Sword of Truth Boxed Set	23.97	Borders	2006	Moderatly Old	23.97	30
Sugar Queen, The	22	Borders	2008	New	22	30
Sandman, The	19.99	Borders	1993	Moderatly Old	19.99	20
Hitchhiker's Guide to the Galaxy	20	Borders	2002	Moderatly Old	20	20
Wheel of Time Boxed Set, The	23.97	Borders	1997	Moderatly Old	23.97	30
Victory of Eagles	25	Borders	2008	New	25	30
Interview with the Vampire	29.95	Borders	1976	Old	29.95	30
Confessor	29.95	Borders	2007	New	29.95	30
Dark Tower Box Set, The	31.96	Borders	2003	Moderatly Old	31.96	40
Immortal Wound	46	Borders	1981	Old	46	50
His Dark Materials Box Set	35.85	Borders	2002	Moderatly Old	35.85	40
So the Witch Won't Eat Me	40	Borders	1977	Old	40	40
Lord of the Rings 50 An Addition, The	85	Borders	2004	Moderatly Old	85	90
Beguilement Audio	90	Borders	2007	New	90	90
All the Weyers of Pern	127.25	Borders	2008	New	127.25	130
Magic Time	108	Borders	2005	Moderatly Old	108	110
Acacia Audio	119.99	Borders	2007	New	119.99	120
His Majesty's Dragon	125	Borders	2008	New	125	130
Confusion, The	200	Borders	2005	Moderatly Old	200	200

**Other Analysis, Plots and Code:**

Initial set up & general Plot

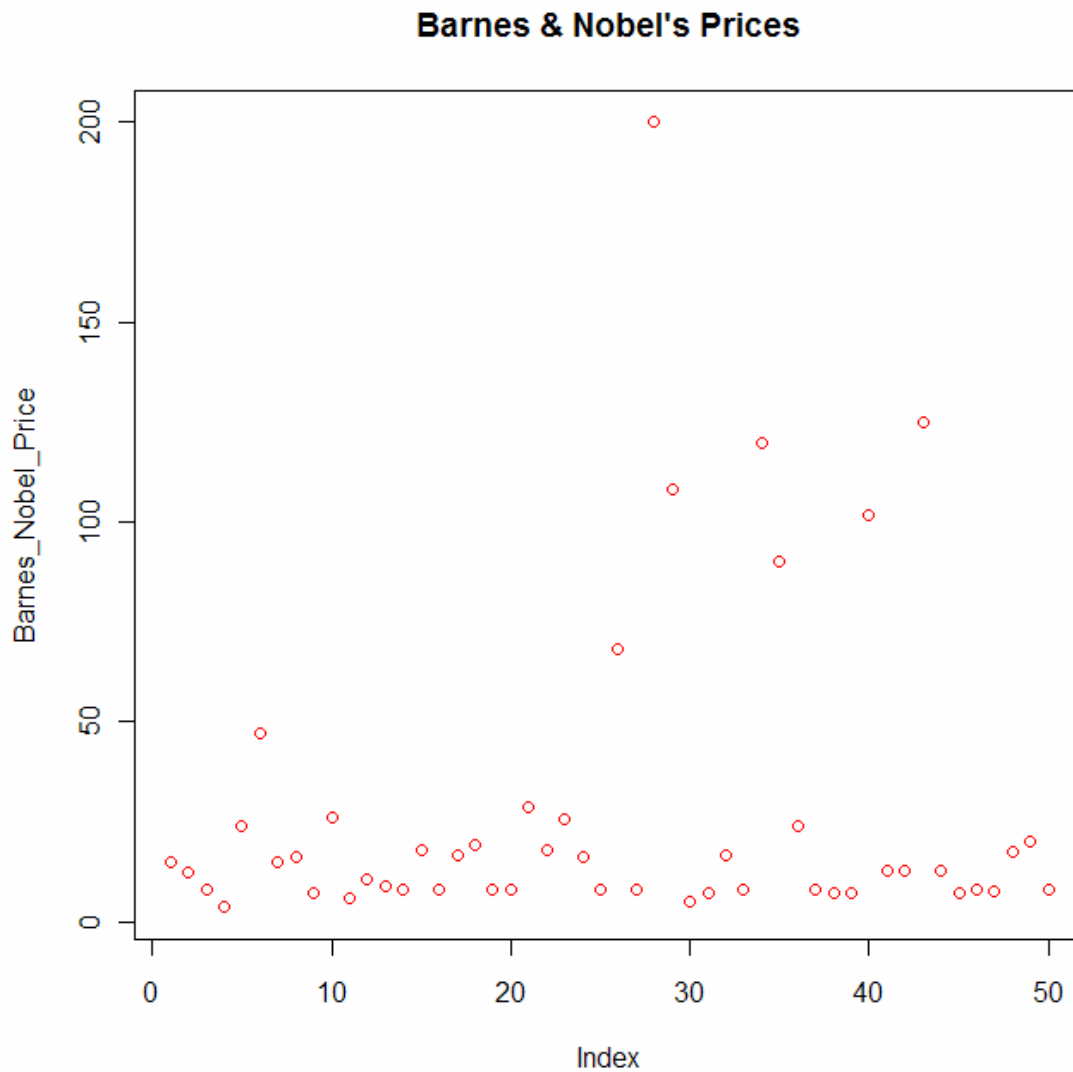
```
> getwd()
[1] "D:/Documents and Settings/Class2009/My Documents"
> setwd("D:/Documents and Settings/Class2009/My Documents/Fall08/MA331")
> Proj <- read.csv("Project.csv", header = TRUE)
> attach(Proj)
```



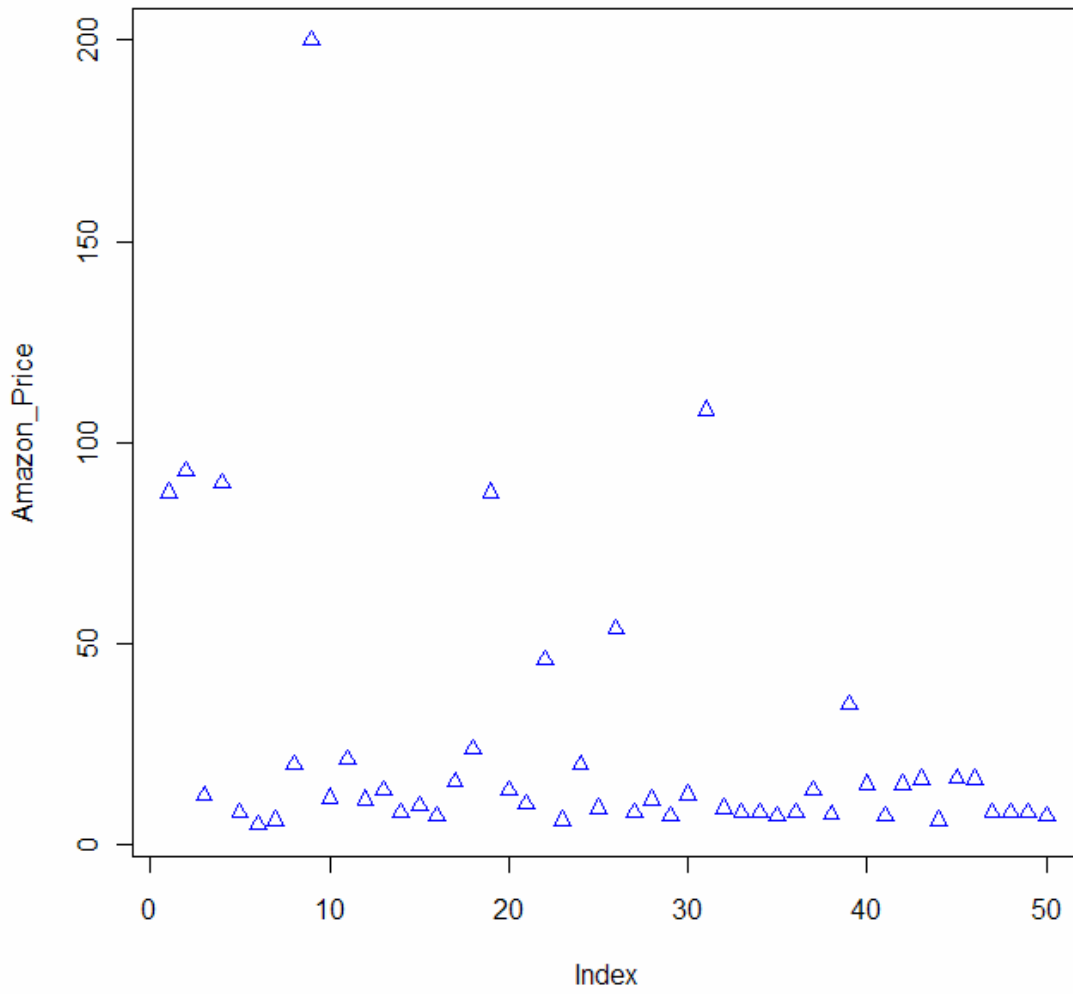


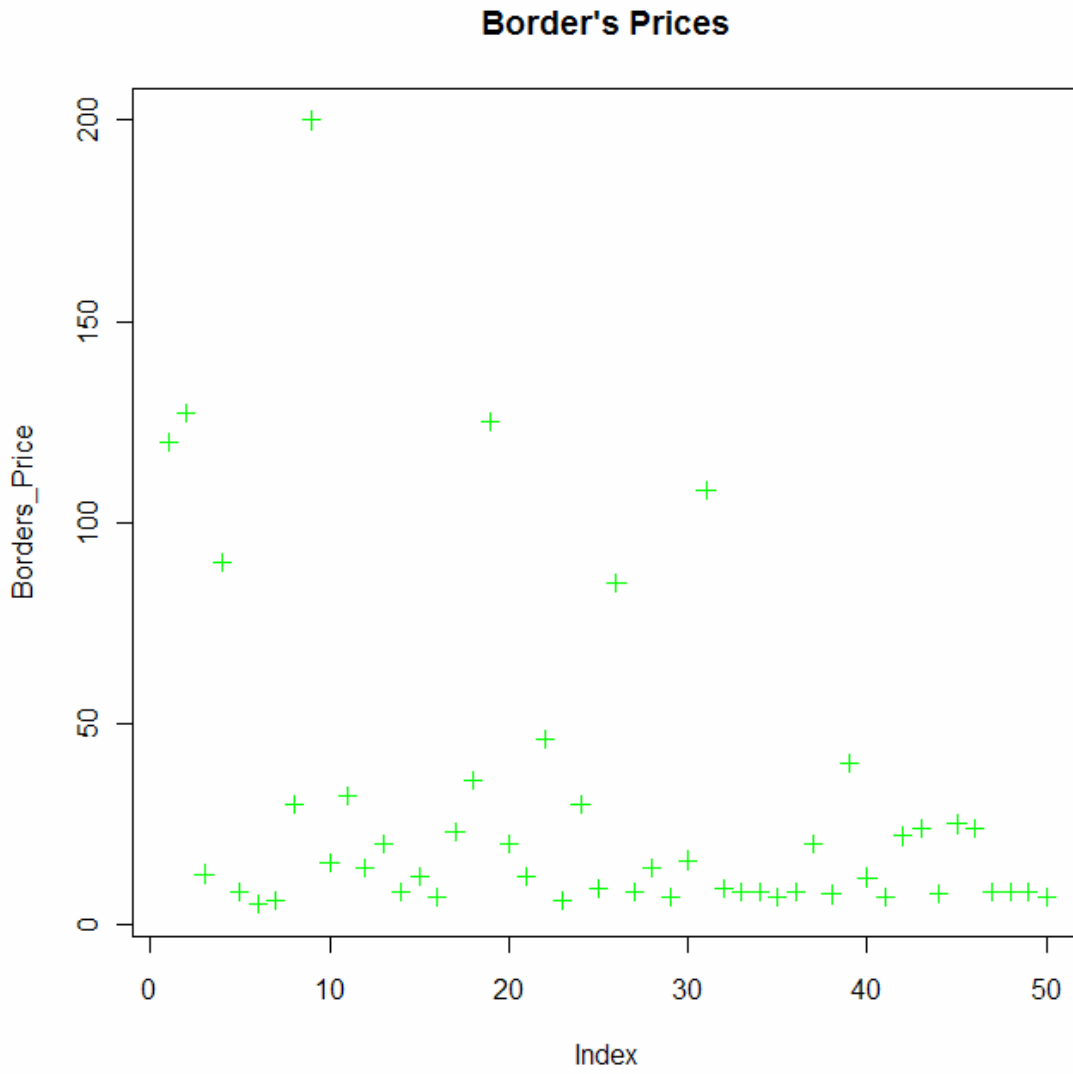
Plots for prices of each vendor

```
> Pch <- 1:3
> Colors <- 1:3
> Colors[1] <- "Red"
> Colors[2] <- "Blue"
> Colors[3] <- "Green"
> plot(Barnes_Nobel_Price, pch = Pch[1], col = Colors[1])
> title("Barnes & Nobel's Prices")
> plot(Amazon_Price, pch = Pch[2], col = Colors[2])
> title("Amazon's Prices")
> plot(Borders_Price, pch = Pch[3], col = Colors[3])
> title("Border's Prices")
> Proj <- read.csv("Project.csv", header = TRUE)
```

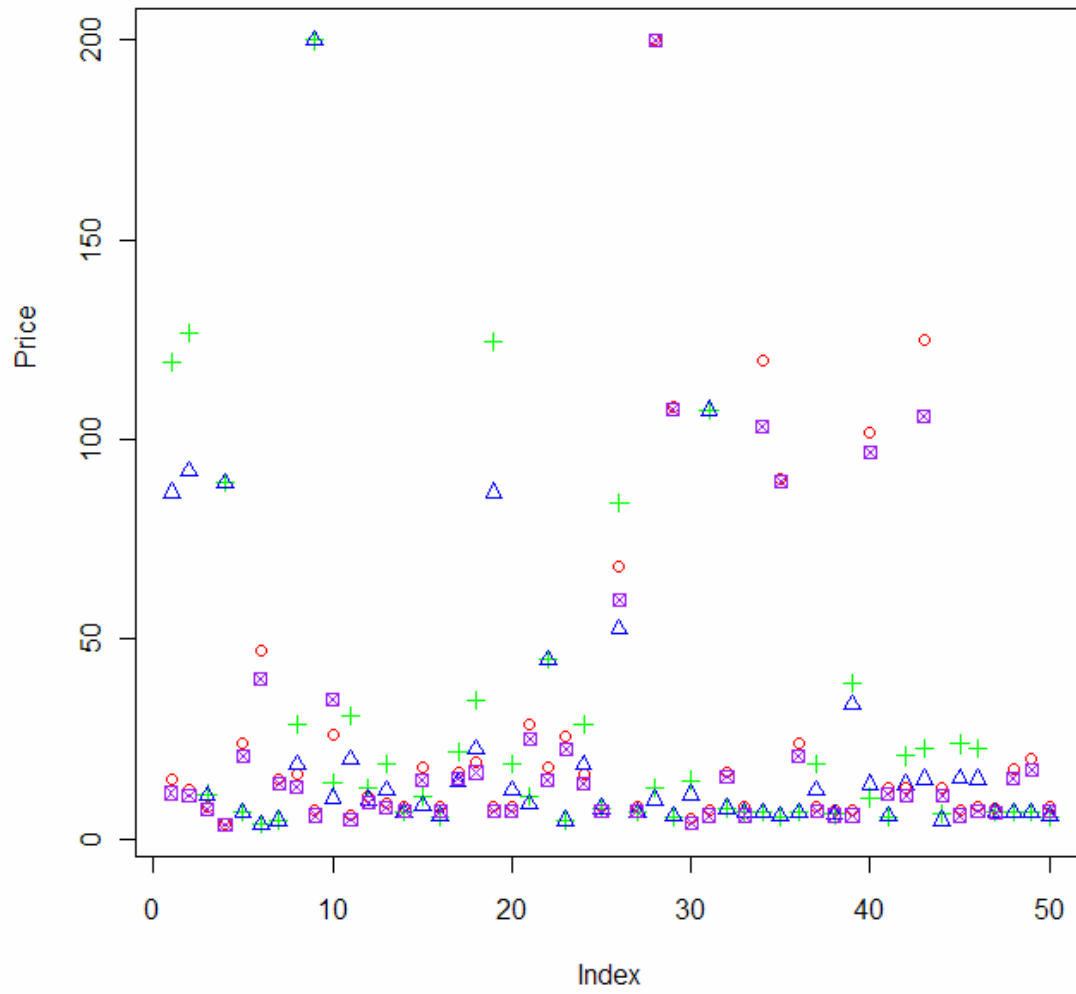


### Amazon's Prices





### Average Price Included



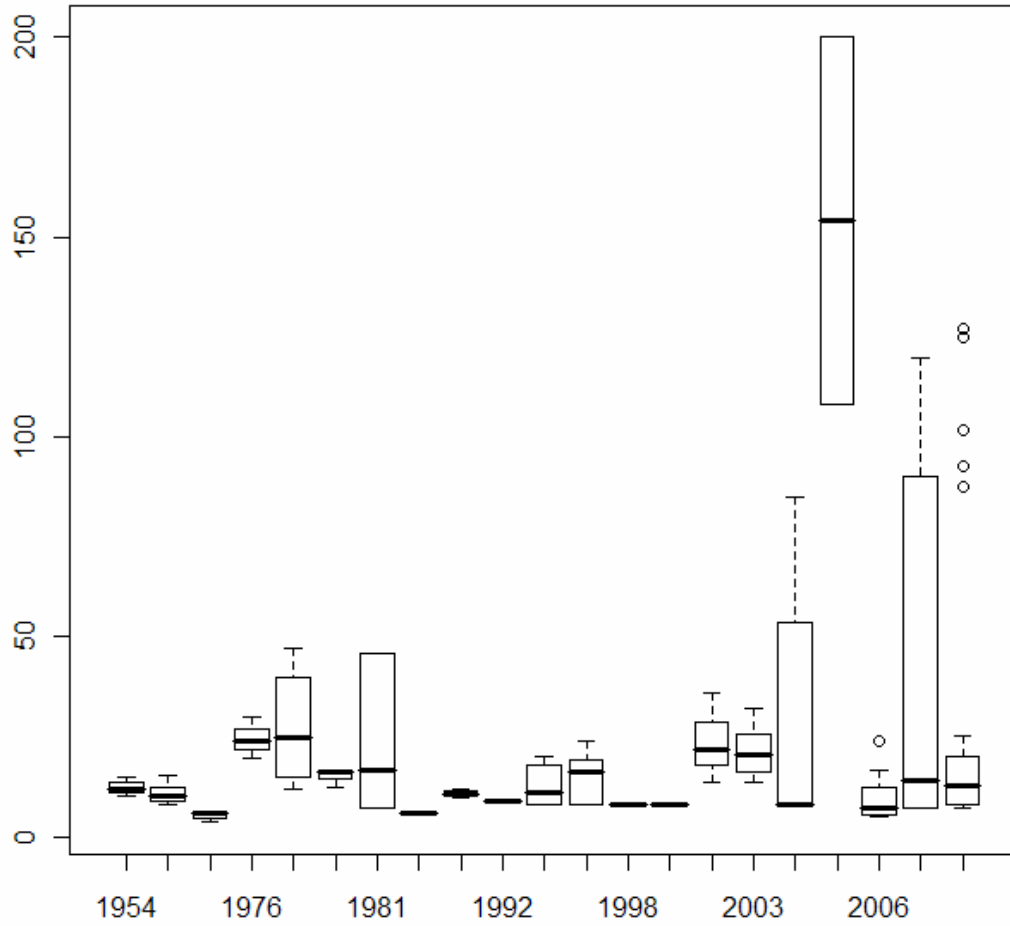






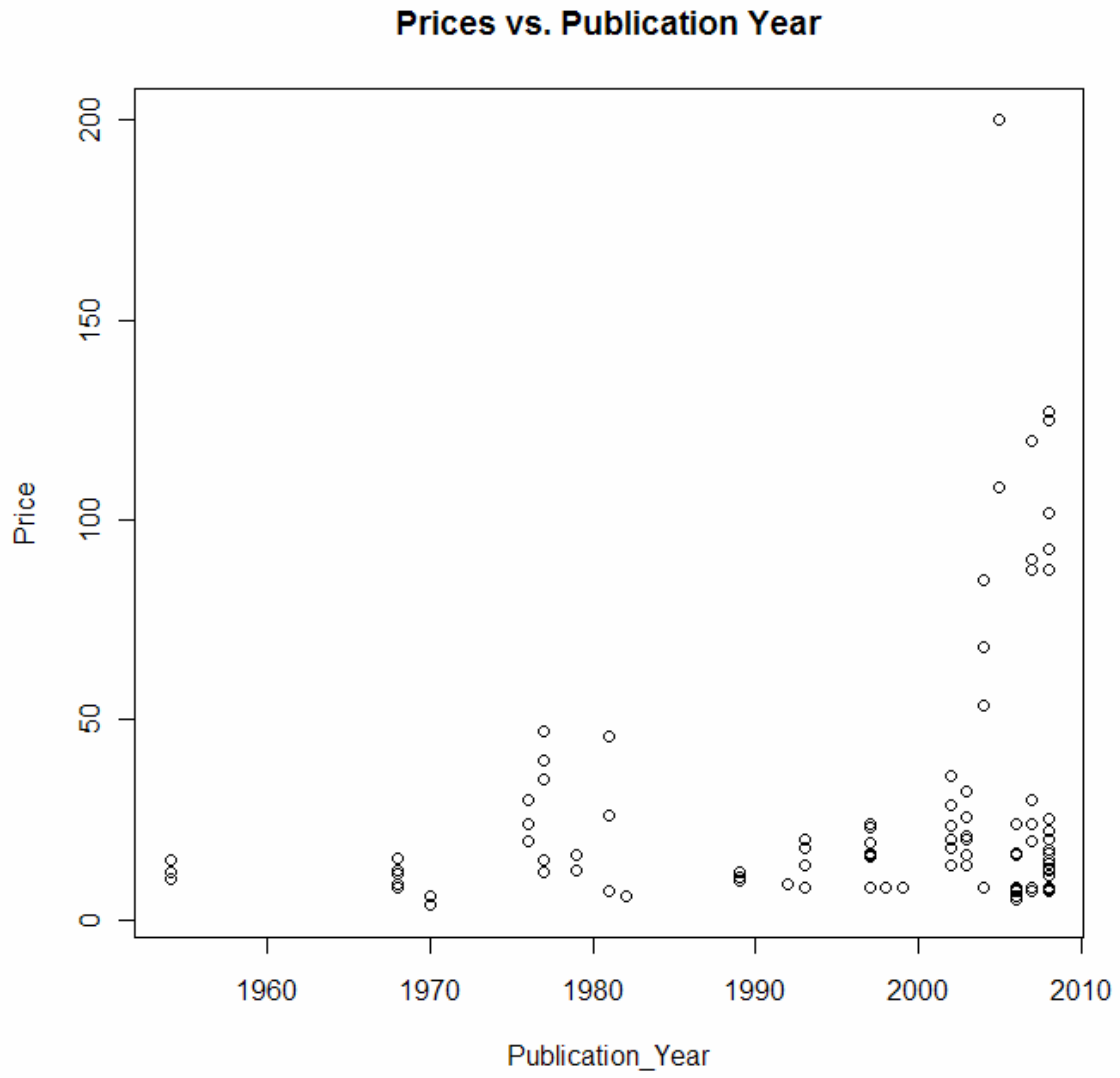
Boxplot of Price vs. Publication Year. No significant finding other than the fact that prices tend to be higher in recent years.

**Boxplot for Price vs. Publication Year**





Scatter Plot of Price vs Publication Year



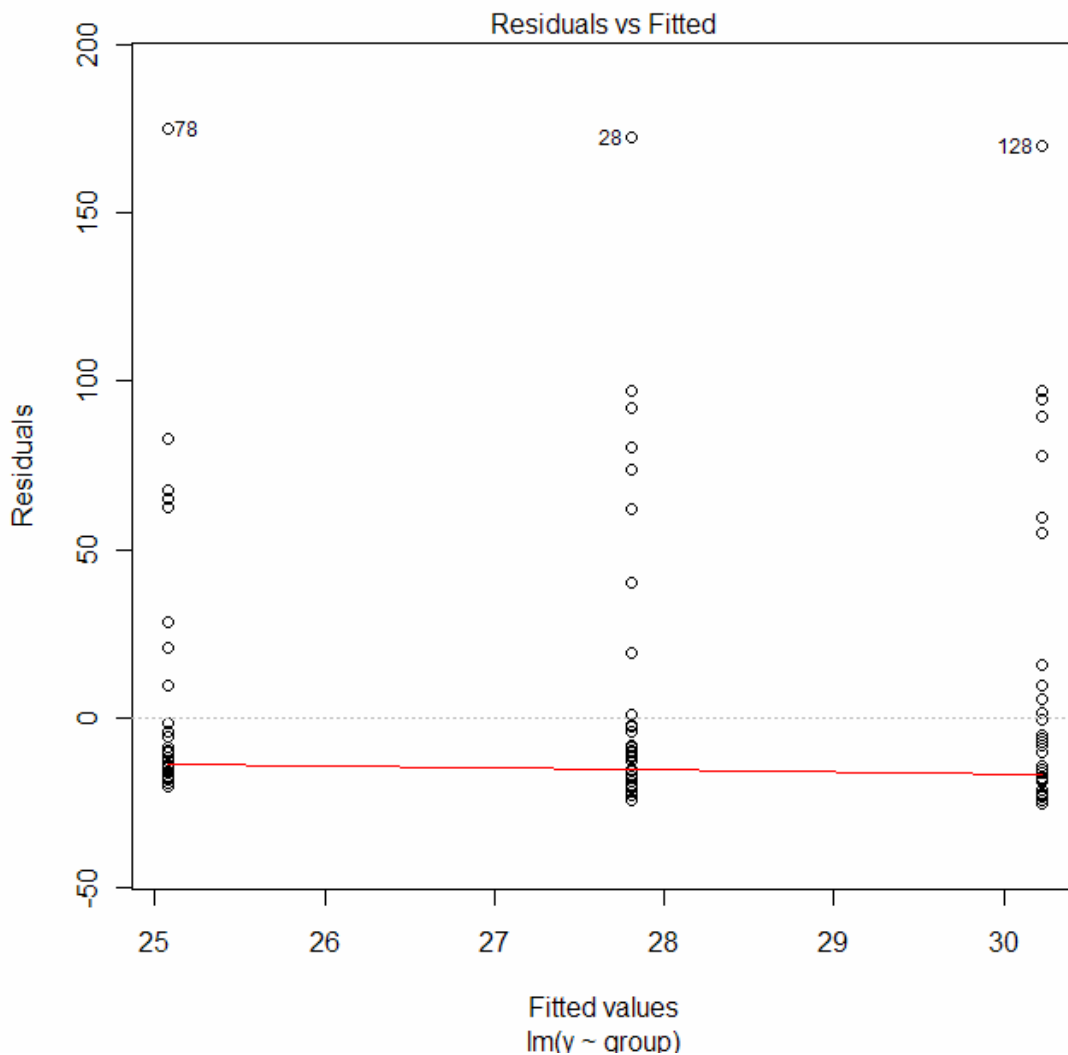
t-test results

```
> t.test(Price)

One Sample t-test

data: Price
t = 8.7552, df = 149, p-value = 4.118e-15
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
 21.45011 33.95482
sample estimates:
mean of x
 27.70247
```

Graphs from Anova Analysis.



Note: There is a clear lack of normalcy for the higher values of the theoretical Quintiles, this is most likely a result of the lack of adequate data for books of higher prices.

