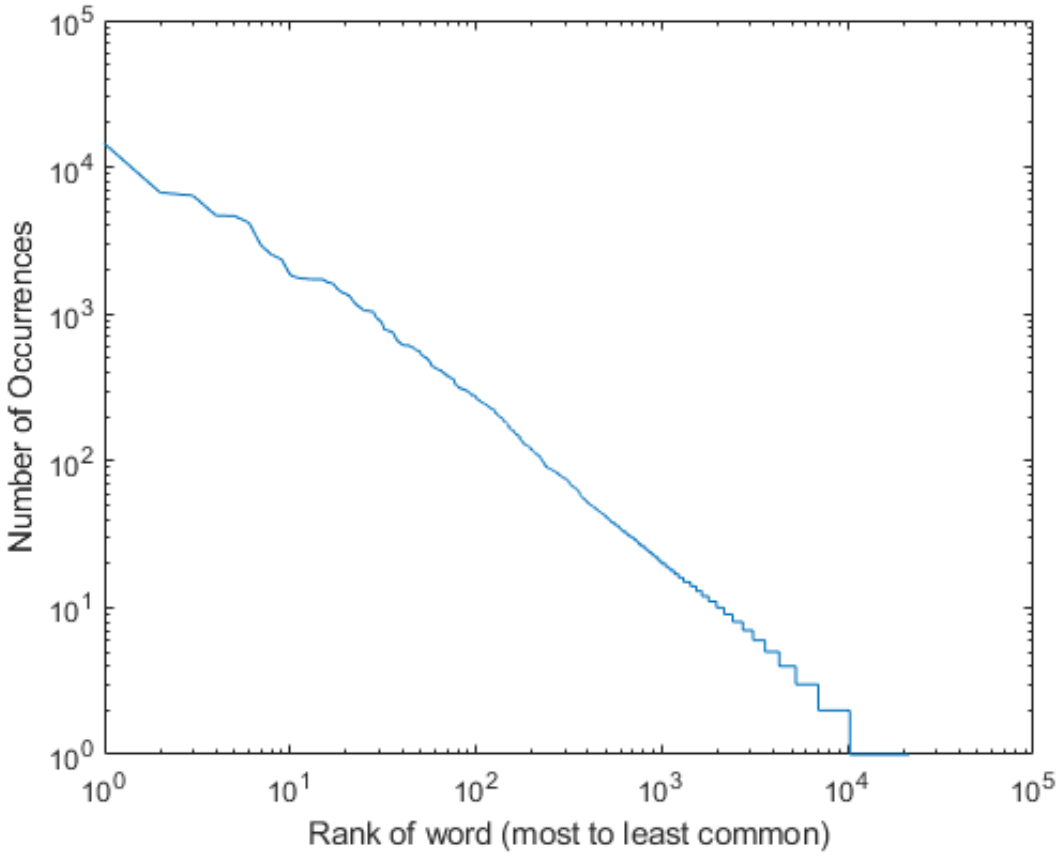
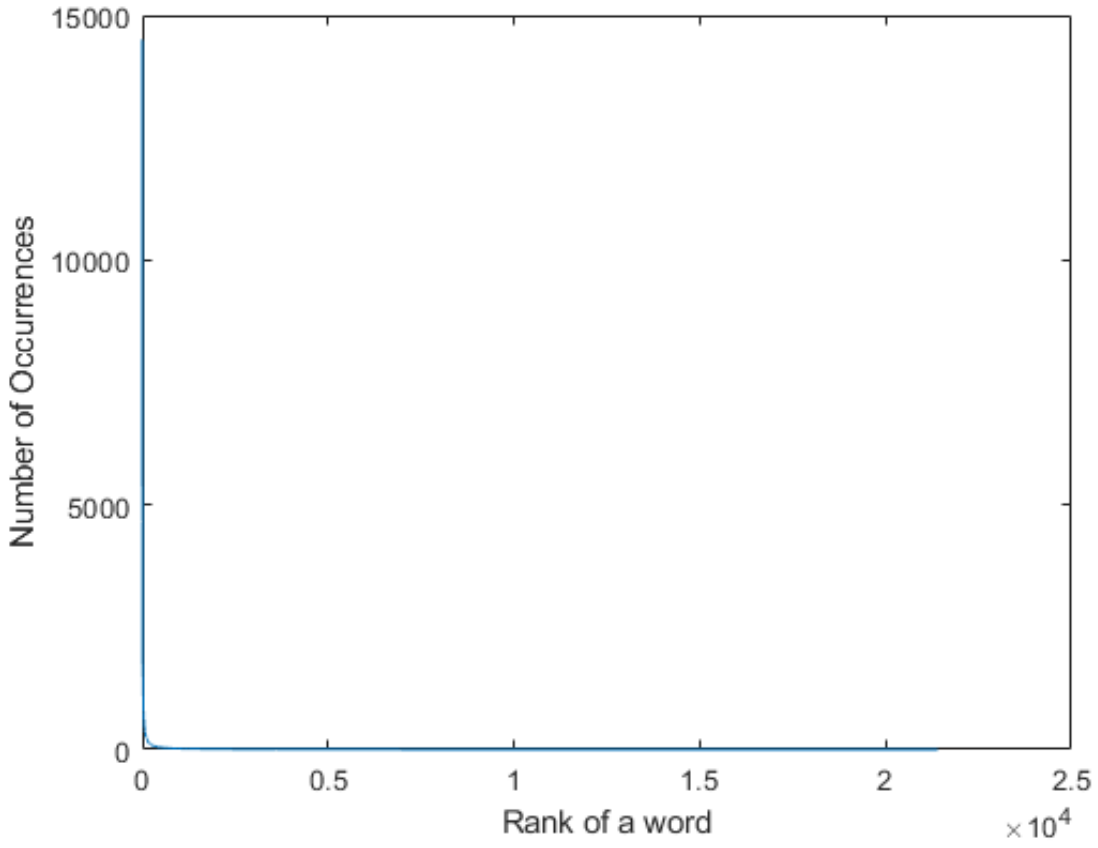
```
clc; clear; close all;
%d) Moby-Dick - Herman Melville
zipf();
```



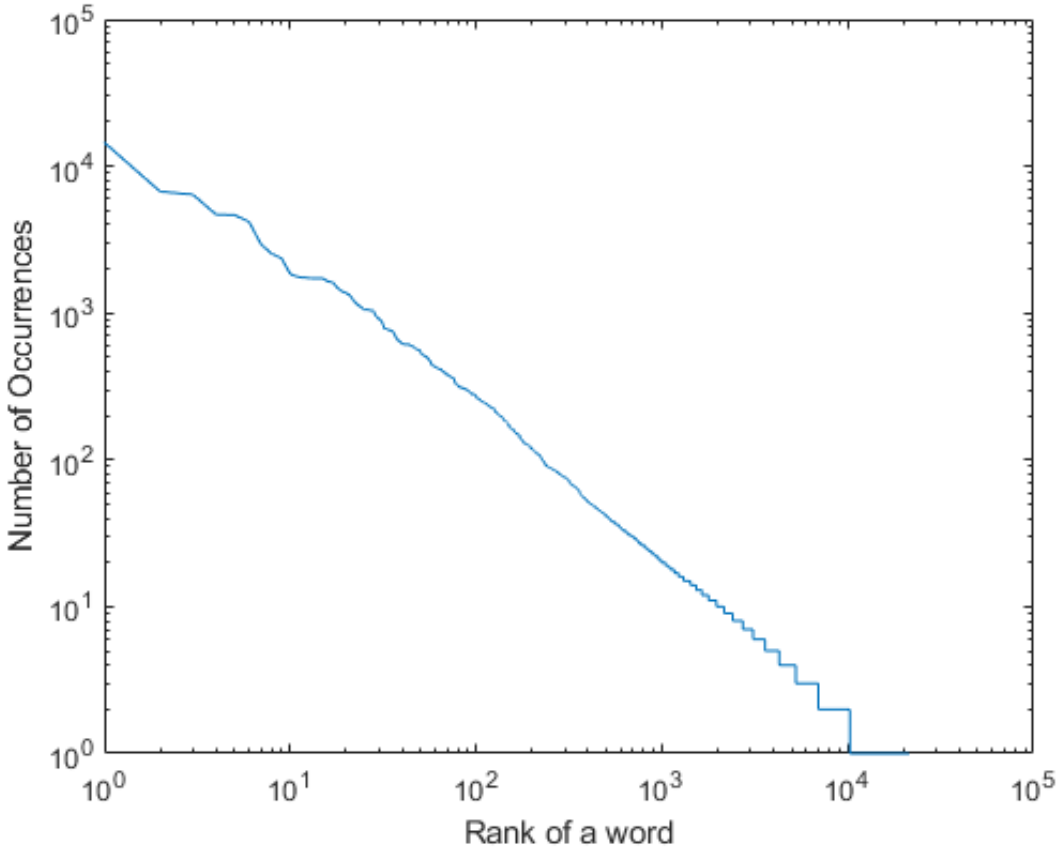
ans = 10×4 table

	Words	NumOccurren...	PercentOfText	CumulativePe...
1	"the"	14500	6.6489	6.6489
2	"of"	6711	3.0773	9.7262
3	"and"	6406	2.9374	12.6636
4	"a"	4677	2.1446	14.8082
5	"to"	4658	2.1359	16.9441
6	"in"	4183	1.9181	18.8622
7	"that"	2920	1.3389	20.2011
8	"his"	2519	1.1551	21.3562
9	"it"	2363	1.0835	22.4397
10	"i"	1842	0.8446	23.2844

```
%5
plot(1:size(words), numOccurrences);
xlabel('Rank of a word');
ylabel('Number of Occurrences');
```




```
%Better Plotted on log graph
loglog(numOccurrences);
xlabel('Rank of a word');
ylabel('Number of Occurrences');
```




```
%5
%Top 10 words based on number of occurrences
words(rankIndex(1:10))
```

```
ans = 10×1 string array
    "the"
    "of"
    "and"
    "a"
    "to"
    "in"
    "that"
    "his"
    "it"
    "i"
```

```
%5
% frequency of most common word
fMostCommon = numOccurrences(1)
```

```
fMostCommon = 14500
```

```
% N = 5
f5CommonMeasured = numOccurrences(5)
```

```
f5CommonMeasured = 4658
```

```
f5CommonCalculated = fMostCommon * 1/5
```

```
f5CommonCalculated = 2900
```

```
% N = 10
f10CommonMeasured = numOccurrences(10)
```

```
f10CommonMeasured = 1842
```

```
f10CommonCalculated = fMostCommon * 1/10
```

```
f10CommonCalculated = 1450
```

```
% in this text, the frequency calculated using Zipf's Law is much closer to
% the expected values, most likely due to analysis of a larger number of
% words in the text. Additionally, of the top 10 words in this novel, 9 are
% the same as in the previous analysis. While the top 10 words are the
% same, the order of most common occurence is slightly different.
```