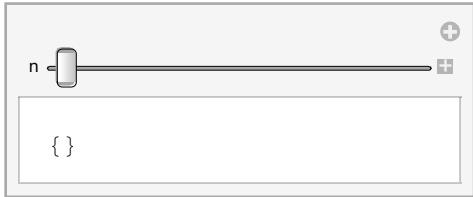


# PSet 3

## Chapter 9

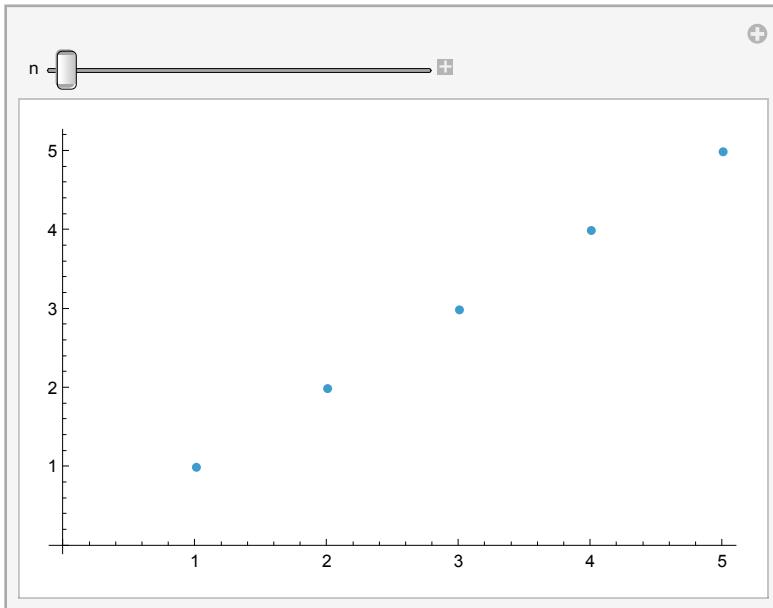
```
In[78]:= Manipulate[Range[n], {n, 0, 100}]
```

```
Out[78]=
```



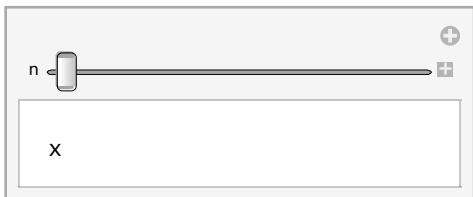
```
In[79]:= Manipulate[ListPlot[Range[n]], {n, 5, 50}]
```

```
Out[79]=
```



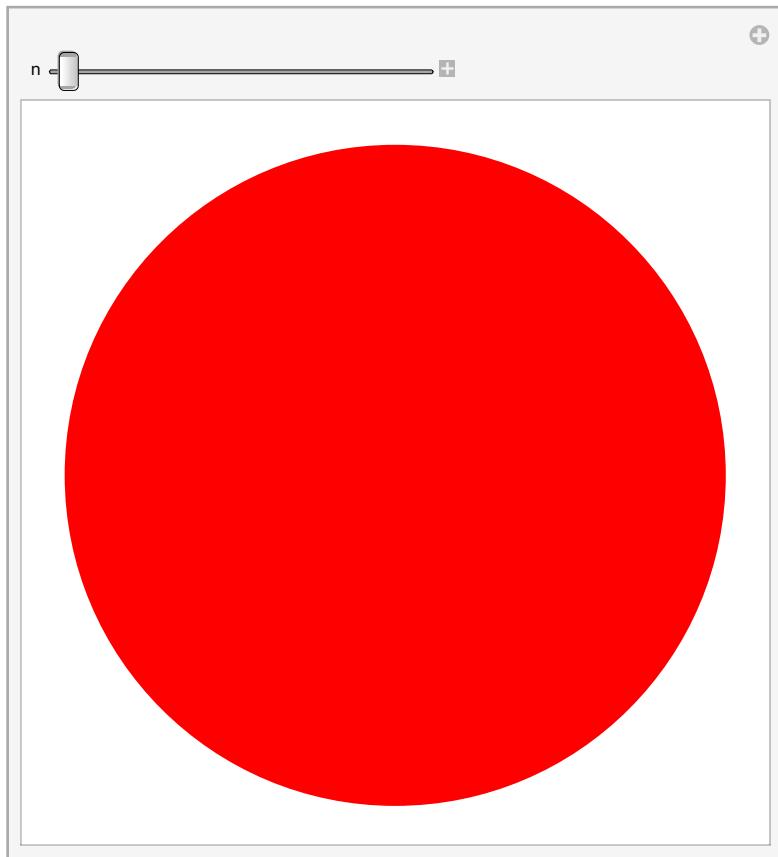
```
In[80]:= Manipulate[Column[Table[x, n]], {n, 1, 10}]
```

```
Out[80]=
```

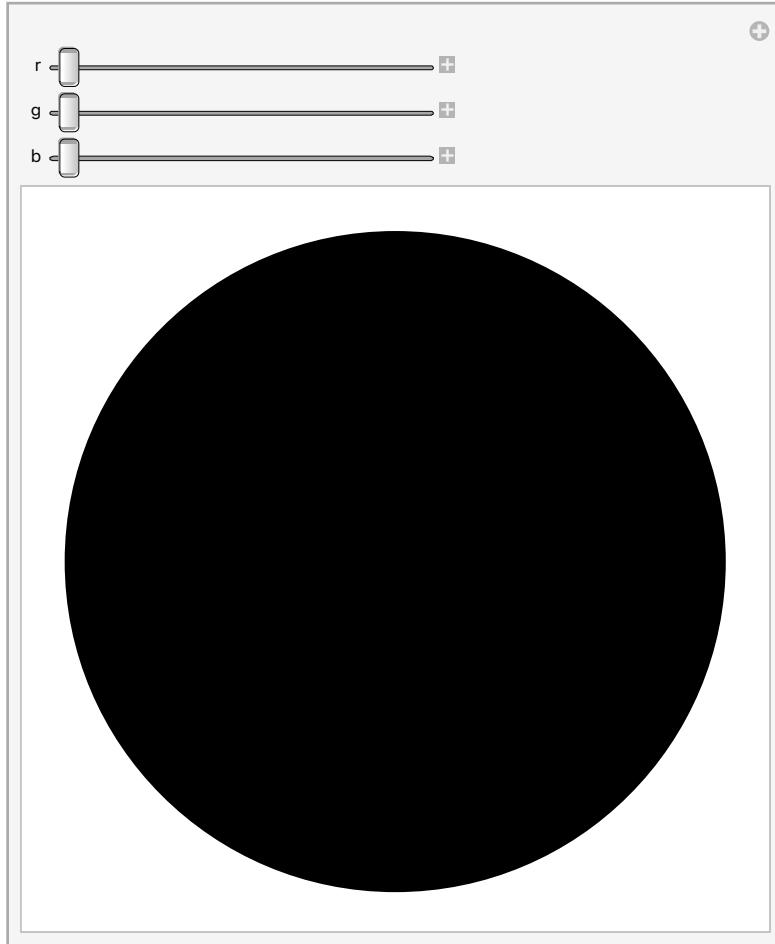


```
In[81]:= Manipulate[Graphics[Style[Disk[], Hue[n]]], {n, 0, 1, 0.02}]
```

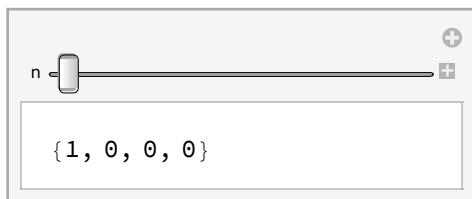
```
Out[81]=
```



```
In[82]:= Manipulate[Graphics[Style[Disk[], RGBColor[r, g, b]]], {r, 0, 1}, {g, 0, 1}, {b, 0, 1}]  
Out[82]=
```



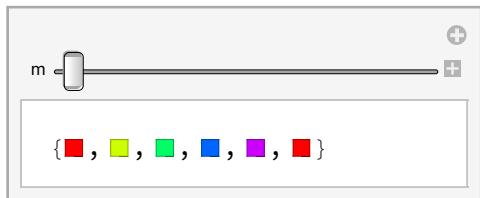
```
In[83]:= Manipulate[IntegerDigits[n], {n, 1000, 9999, 1}]  
Out[83]=
```



```
In[84]:= IntegerDigits[9999]  
Out[84]=  
{9, 9, 9, 9}
```

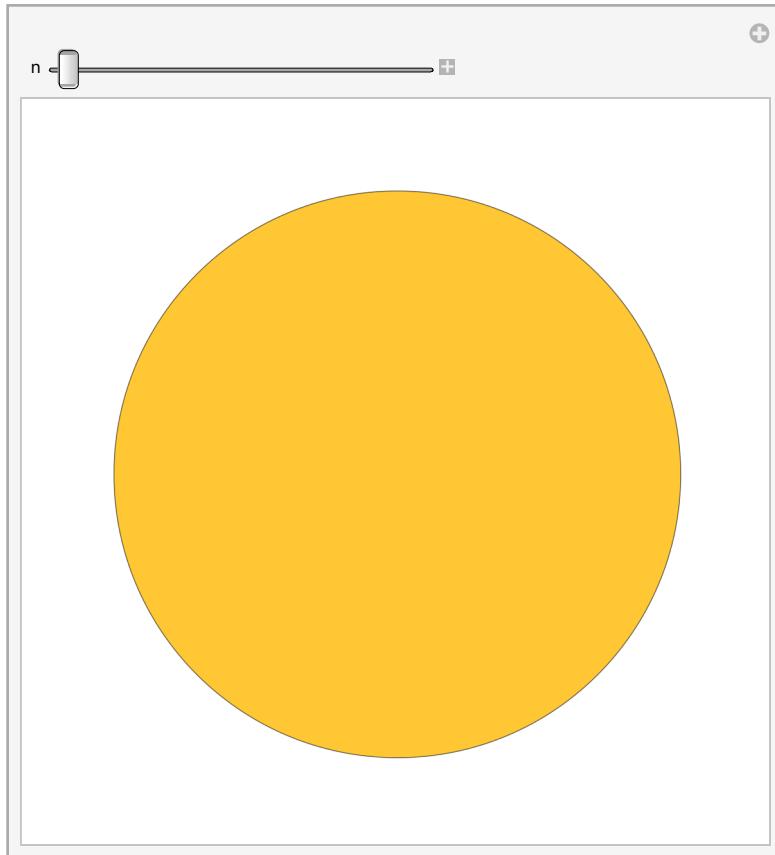
```
In[85]:= Manipulate[Table[Hue[n], {n, 0, 1, 1/m}], {m, 5, 50}]
```

```
Out[85]=
```



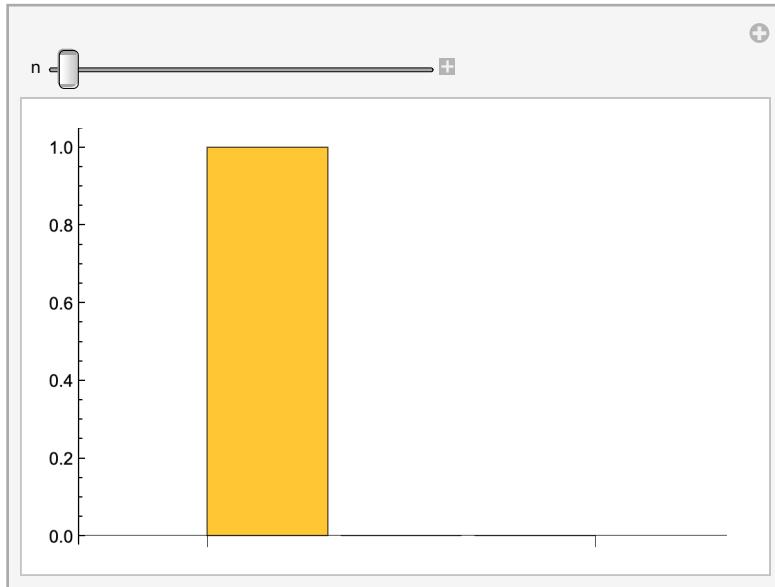
```
In[86]:= Manipulate[PieChart[Table[1, n]], {n, 1, 10}]
```

```
Out[86]=
```



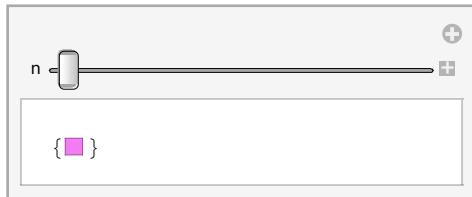
```
In[87]:= Manipulate[BarChart[IntegerDigits[n]], {n, 100, 999, 1}]
```

```
Out[87]=
```



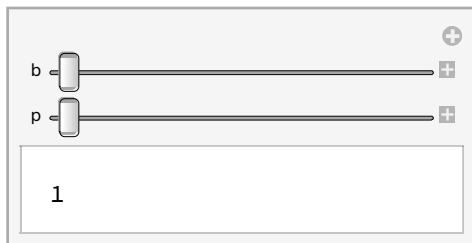
```
In[88]:= Manipulate[Table[RandomColor[], n], {n, 1, 50}]
```

```
Out[88]=
```



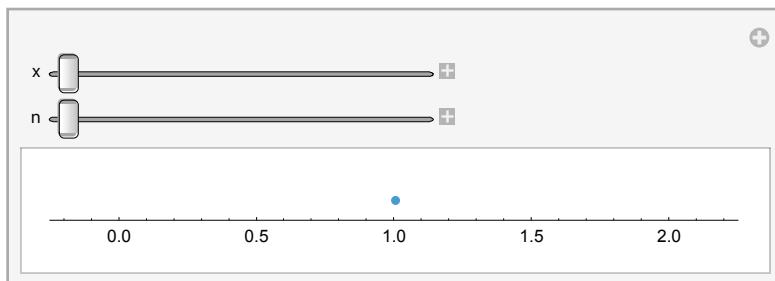
```
In[89]:= Manipulate[Column[Range[b]^p], {b, 1, 25}, {p, 1, 10, 1}]
```

```
Out[89]=
```

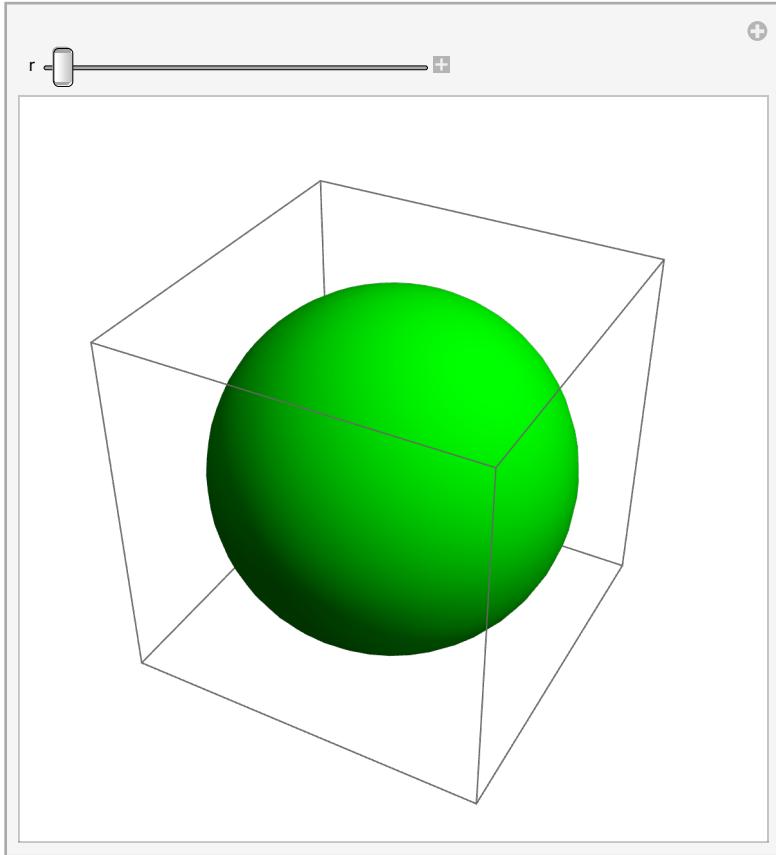


```
In[90]:= Manipulate[NumberLinePlot[Range[x]^n], {x, 1, 10}, {n, 1, 5}]
```

```
Out[90]=
```



```
In[91]:= Manipulate[Graphics3D[Style[Sphere[], RGBColor[r, 255 - r, 0]], {r, 0, 255}]  
Out[91]=
```



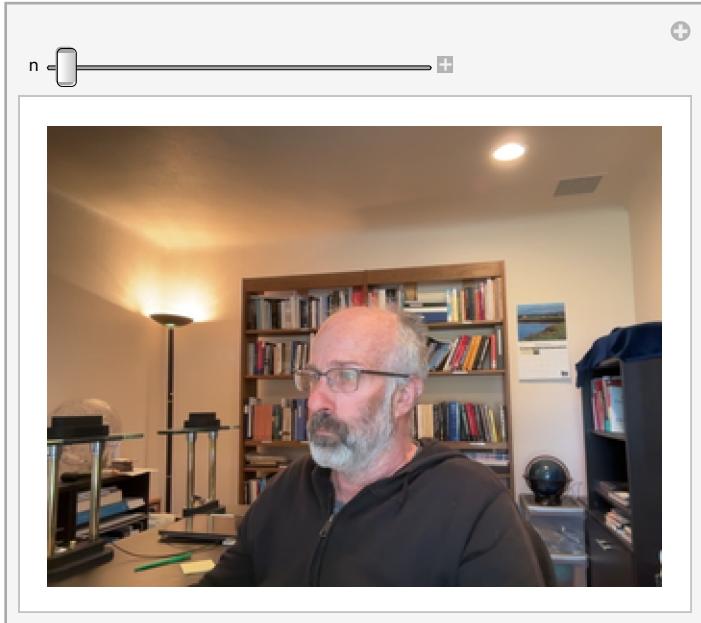
## Chapter 10

```
In[92]:= ColorNegate[EdgeDetect[CurrentImage[]]]  
Out[92]=
```



```
In[93]:= Manipulate[Blur[CurrentImage[], n], {n, 0, 20}]
```

```
Out[93]=
```



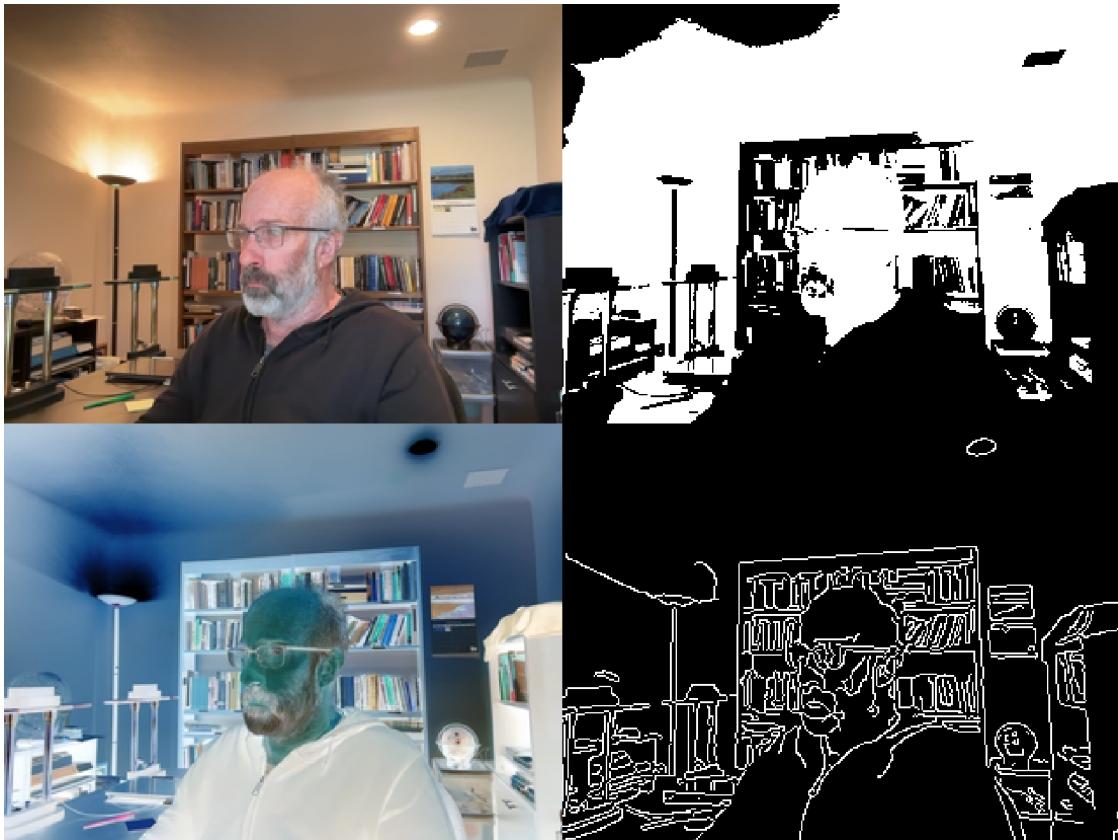
```
In[94]:= Table[Blur[EdgeDetect[CurrentImage[], n], {n, 1, 10}]
```

```
Out[94]=
```



```
In[95]:= ImageCollage[{CurrentImage[], Binarize[CurrentImage[]],  
ColorNegate[CurrentImage[]], EdgeDetect[CurrentImage[]]}]
```

Out[95]=

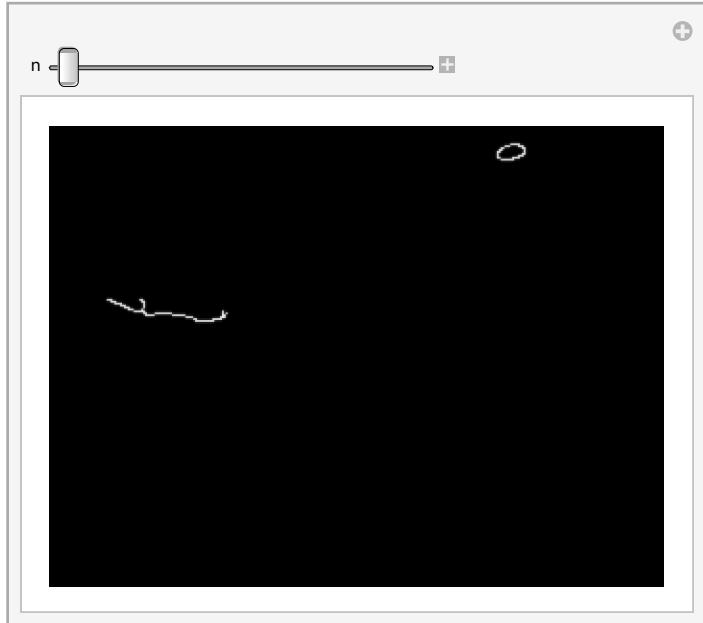


```
In[96]:= ImageAdd[{CurrentImage[], Binarize[CurrentImage[]]}]
```

Out[96]=

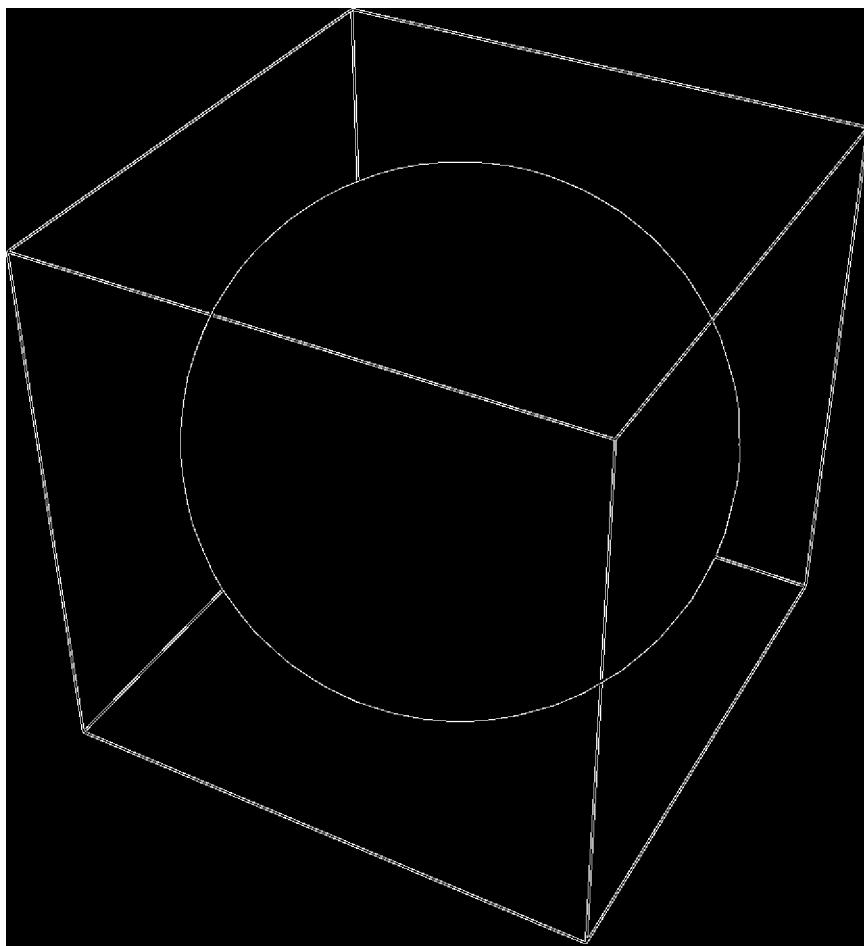


```
In[97]:= Manipulate[Blur[EdgeDetect[CurrentImage[]], n], {n, 1, 20}]  
Out[97]=
```

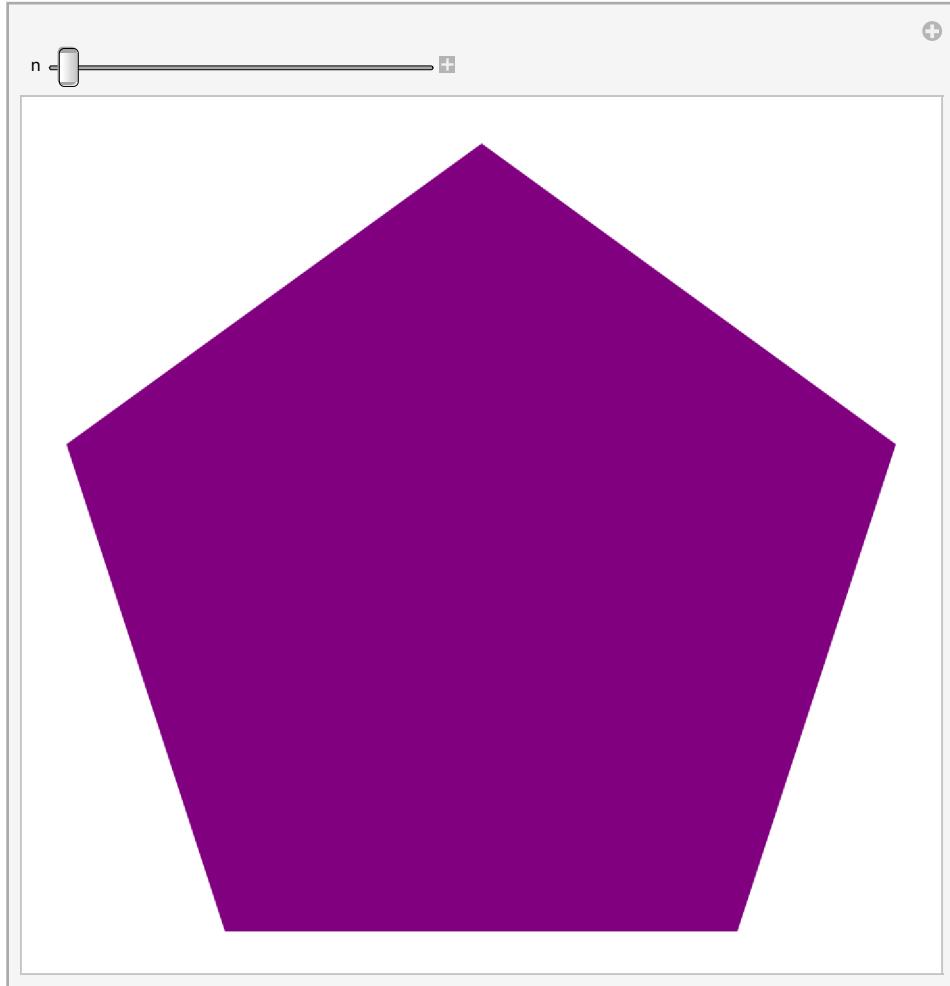


```
In[98]:= EdgeDetect[Graphics3D[Sphere[]]]
```

```
Out[98]=
```



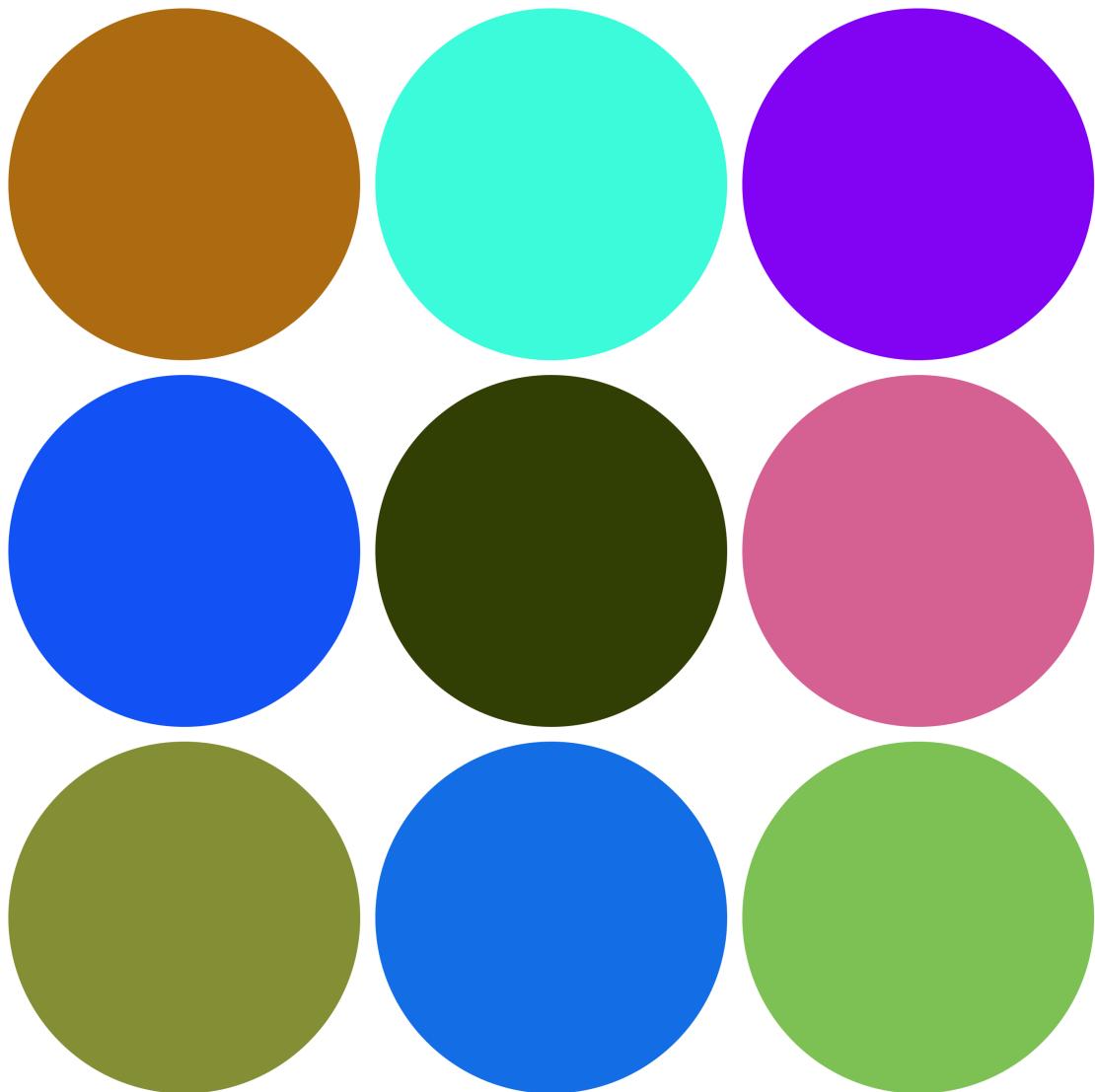
```
In[99]:= Manipulate[Blur[Graphics[Style[RegularPolygon[5], Purple]], n], {n, 0, 20}]  
Out[99]=
```



In[100]:=

```
ImageCollage[Table[Graphics[Style[Disk[], RandomColor[]]], 9]]
```

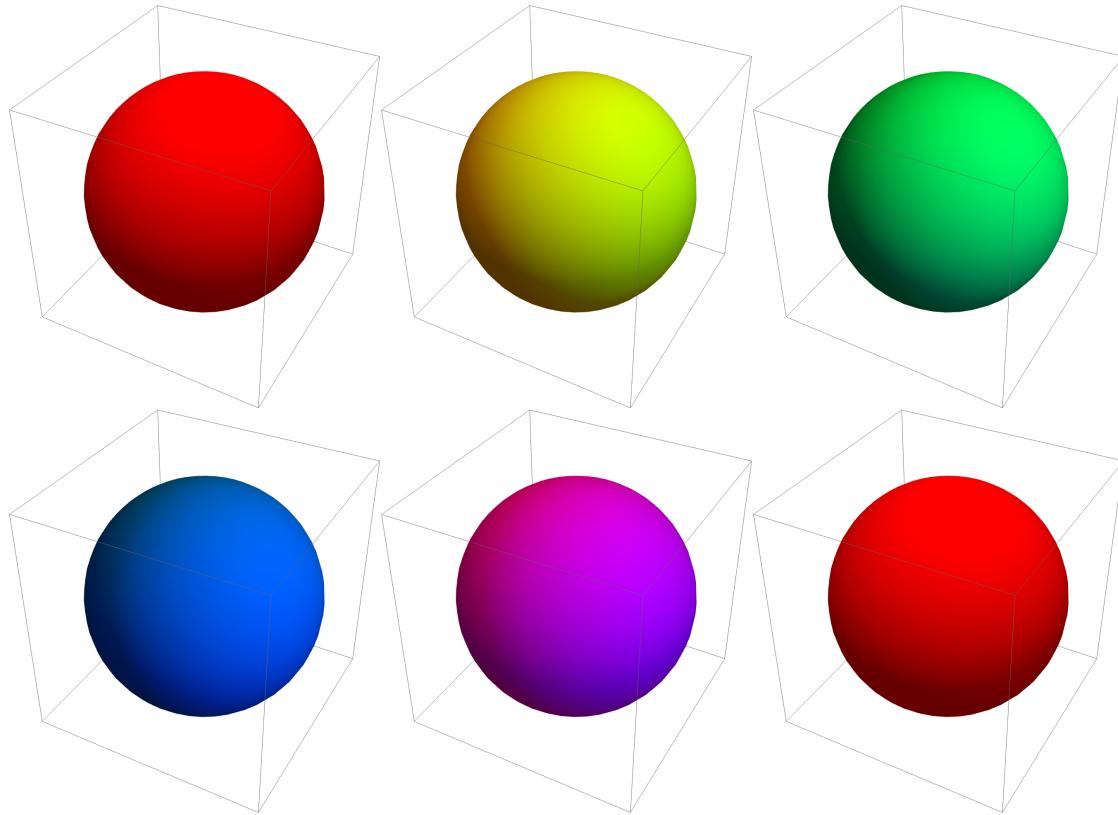
Out[100]=



In[101]:=

```
ImageCollage[Table[Graphics3D[Style[Sphere[], Hue[n]]], {n, 0, 1, 0.2}]]
```

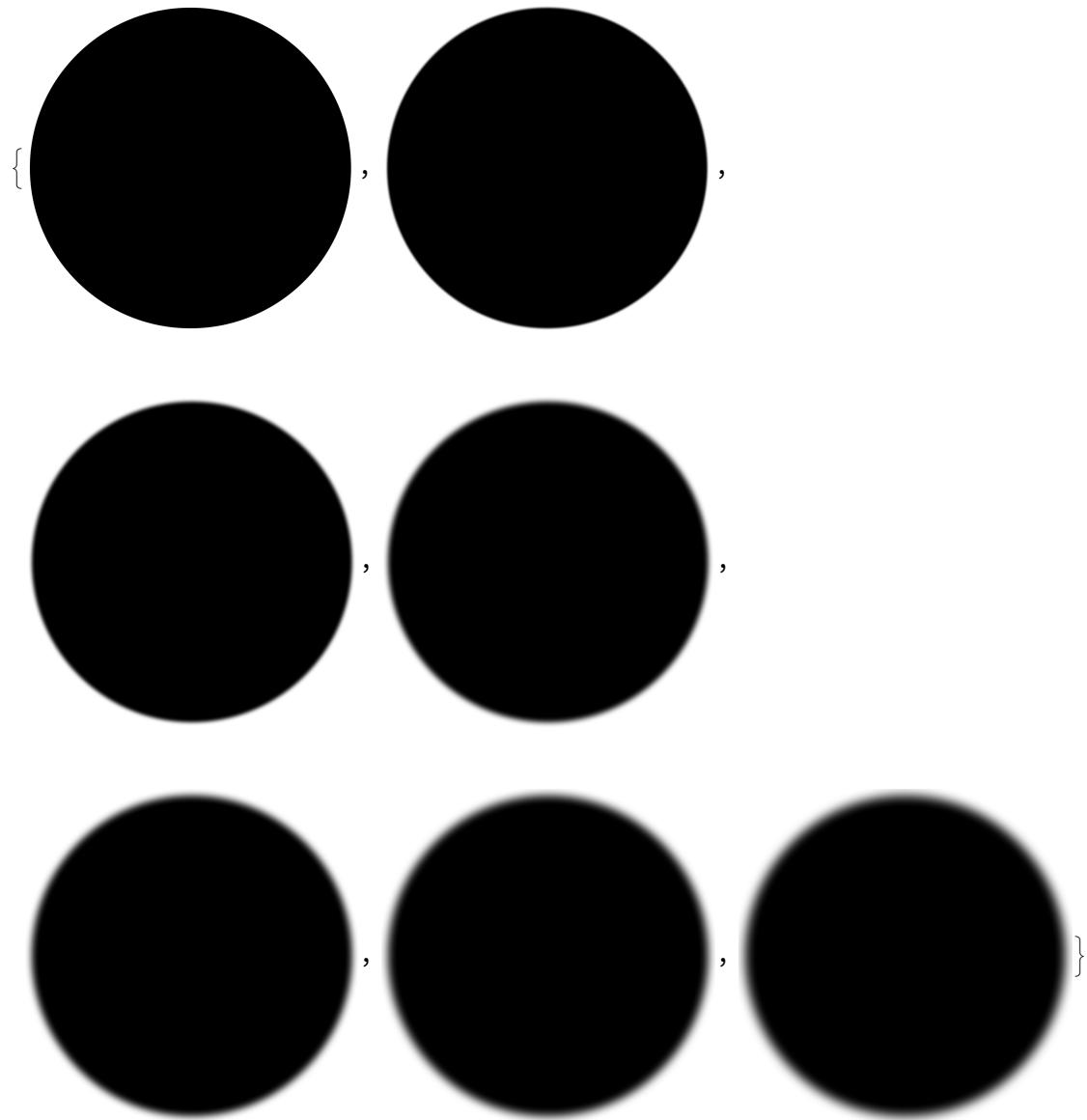
Out[101]=



In[102]:=

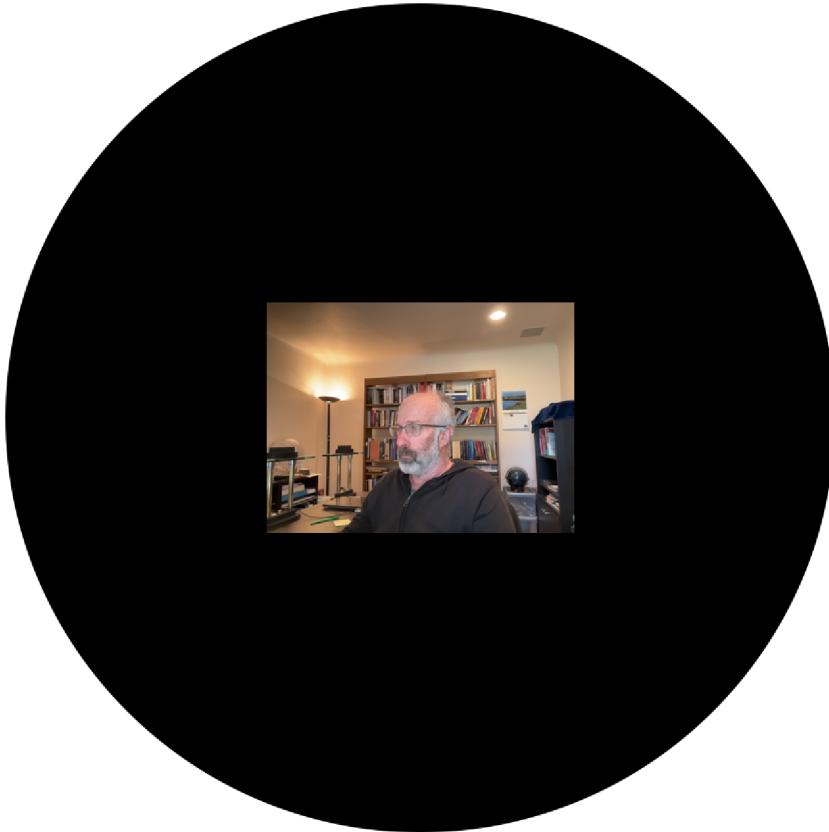
```
Table[Blur[Graphics[Disk[]], n], {n, 0, 30, 5}]
```

Out[102]=



In[103]:=

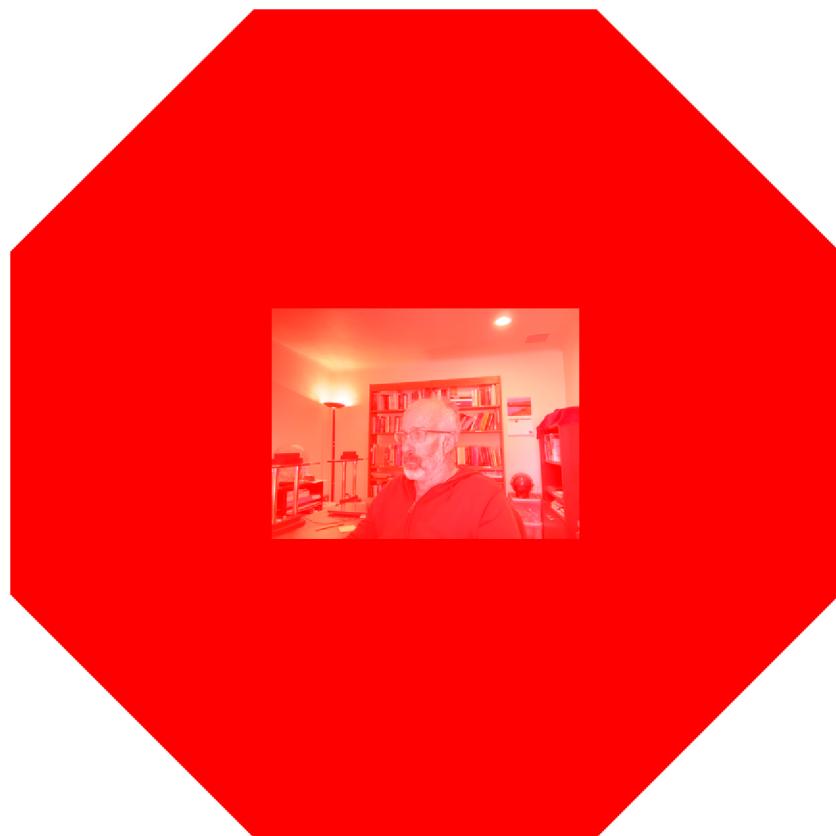
```
In[104]:= ImageAdd[{Graphics[Disk[]], CurrentImage[]}]  
Out[104]=
```



In[105]:=

```
ImageAdd[{Graphics[Style[RegularPolygon[8], Red]], CurrentImage[]}]
```

Out[105]=



In[106]:=

```
ImageAdd[{CurrentImage[], ColorNegate[EdgeDetect[CurrentImage[]]]}]
```

Out[106]=



# Chapter 10

```
In[107]:= StringJoin["hello", "hello"]
Out[107]= hellohello

In[108]:= StringJoin[ToUpperCase[Alphabet[]]]
Out[108]= ABCDEFGHIJKLMNOPQRSTUVWXYZ

In[109]:= StringReverse[StringJoin[Alphabet[]]]
Out[109]= zyxwvutsrqponmlkjihgfedcba

In[110]:= StringJoin[Table["AGCT", 100]]
Out[110]= AGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTA:
           GCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGC:
           TAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTA:
           GCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGC:
           TAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTAGCTA:
           GCTAGCT
```

```
In[111]:= StringTake[StringJoin[Alphabet[]], 6]
Out[111]= abcdef
```

```
In[112]:= Column[Table[StringTake["This is about strings", n],
  {n, StringLength["This is about strings"]}]]

Out[112]=
T
Th
Thi
This
This
This i
This is
This is
This is a
This is ab
This is abo
This is abou
This is about
This is about
This is about s
This is about st
This is about str
This is about stri
This is about strin
This is about string
This is about strings

In[113]:= BarChart[StringLength[TextWords["A long time ago in a galaxy far, far away"]]]

Out[113]=



| Word Length | Frequency |
|-------------|-----------|
| 1           | 1         |
| 2           | 2         |
| 3           | 3         |
| 4           | 4         |
| 5           | 6         |
| 6           | 4         |



In[114]:= StringLength[WikipediaData["computer"]]

Out[114]=
60266

In[115]:= Length[TextWords[WikipediaData["computer"]]]

Out[115]=
9271
```

```
In[116]:= Take[TextSentences[WikipediaData["strings"]], 1]
Out[116]= {String or strings may refer to:}

In[117]:= StringJoin[StringTake[TextSentences[WikipediaData["computers"]], 1]]
Out[117]= AMTTACCESEMTTCTPP=ITTDDBTTT==DTLTTTSITIIDMTAAATTIASIBIAITITIITSI=CCAHTFTTTAEBNH
=ITax()2{,THI=DHTTTTAB==CBTDETTITIRTZTT=PTEITDTTHACIINCTLOTIIIHBT==TTHTVTE=
ECWATIHJTIIAATBAIL=TJFCJTHATHTTWITT=TTDTKIHKNHNPNIWTGFTTWISTITS=TLTTTT=C=A=SH=
TC==ATIET=WTTSC=TSC=TCATRDIRTPWIWSAIT=TES=TTSHTALTSG=
AETTLSIETWOAMTTRACrRIISFIIG=IDOHCIAMA=WTOBITSTBSIT=SMSTSS=SSCICW=T=TTMIAL=
TITHTFMPWSTCBOTOI=ITTSTTITMWITC=PUTTS=MF=ATHHIT=PALTP=ETHOBSA=CTITTCITA"=AWA=
TMH=TQCVSLTTT=ACARPE=AT=====M

In[118]:= Max[StringLength[WordList[]]]
Out[118]= 23

In[119]:= Count[LetterNumber[StringTake[WordList[], 1]], 17]
Out[119]= 194

In[120]:= ListLinePlot[StringLength[Take[WordList[], 1000]]]
Out[120]=
```

In[121]:=

```
WordCloud[Table[Characters[Part[WordList[], RandomInteger[39176]]], 100]]  
(*Not enough memory to compute for entire  
wordlist so I just did 100 random words from it*)
```

Out[121]=

