

# Harper — PS 3 — 2025-01-24

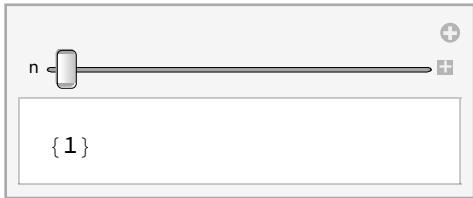
## Sections 9-11

In[56]:=

### Section 9

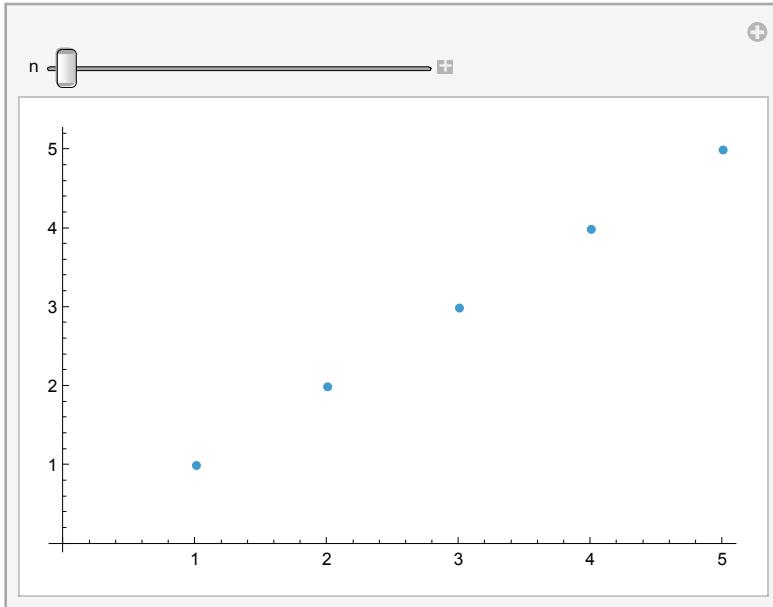
In[57]:= Manipulate[Range[n], {n, 1, 100, 1}]

Out[57]=



In[58]:= Manipulate[ListPlot[Range[n]], {n, 5, 50, 1}]

Out[58]=



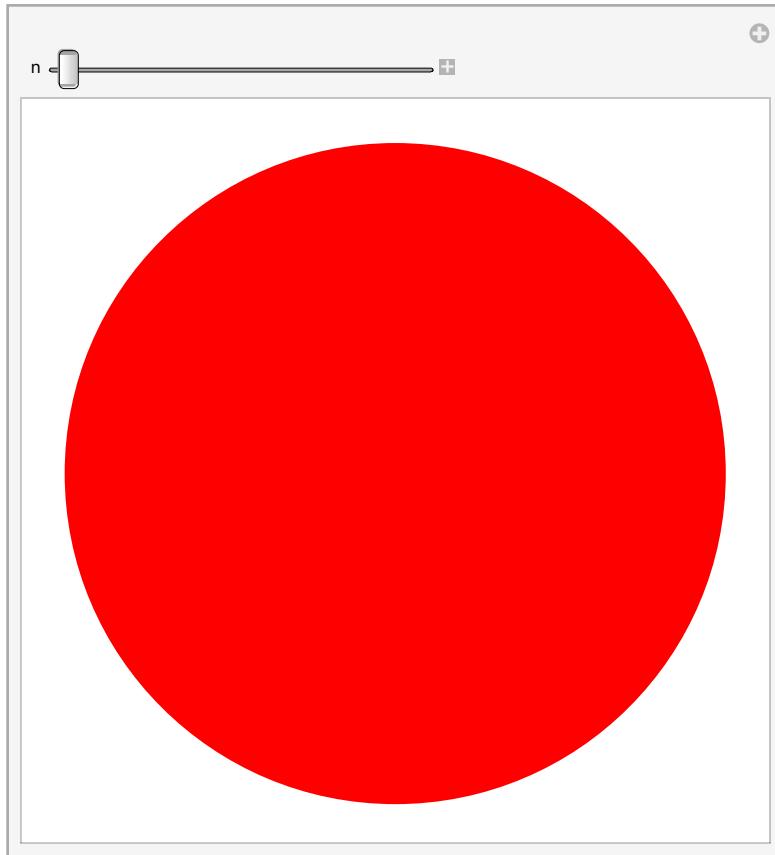
```
In[59]:= Manipulate[Column[Table[x, n]], {n, 1, 10, 1}]
```

```
Out[59]=
```



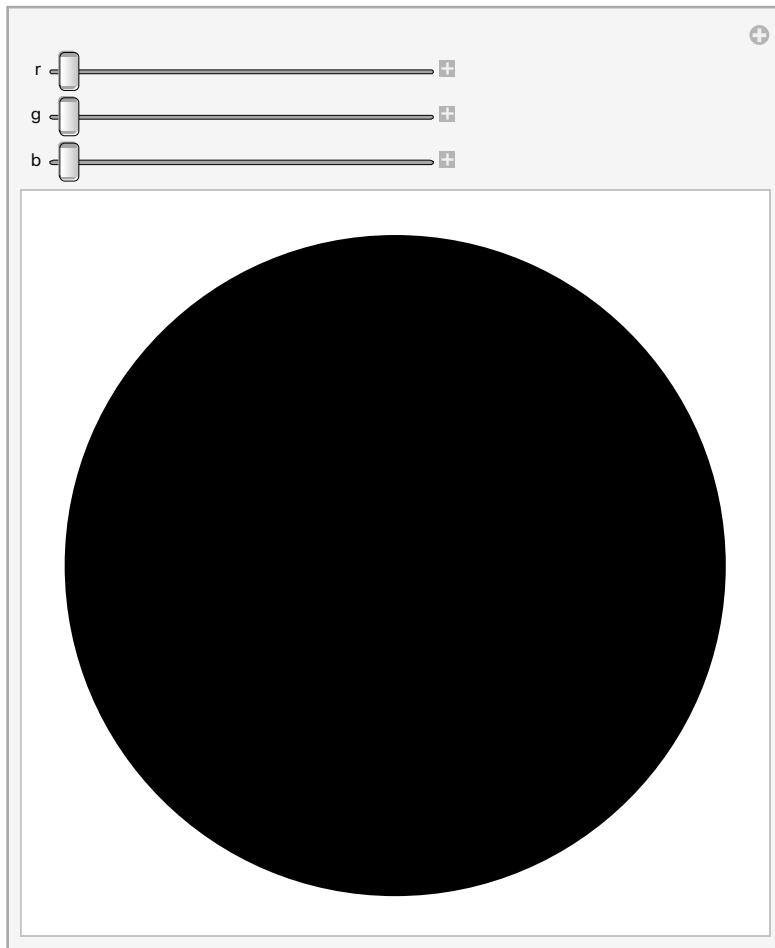
```
In[60]:= Manipulate[Graphics[Style[Disk[], Hue[n]]], {n, 0, 1}]
```

```
Out[60]=
```



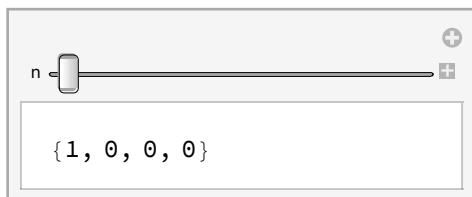
```
In[61]:= Manipulate[Graphics[Style[Disk[], RGBColor[r, g, b]]], {r, 0, 1}, {g, 0, 1}, {b, 0, 1}]
```

```
Out[61]=
```



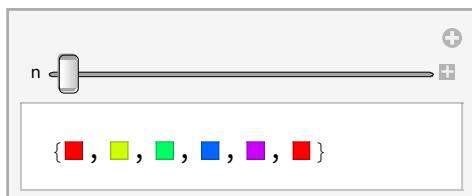
```
In[62]:= Manipulate[IntegerDigits[n], {n, 1000, 9999, 1}]
```

```
Out[62]=
```



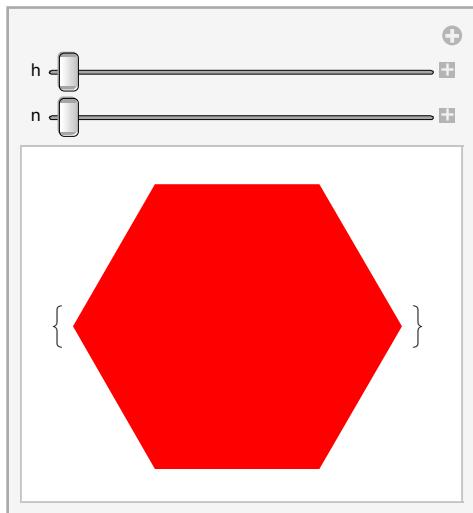
```
In[63]:= Manipulate[Table[Hue[h], {h, 0, 1, n}], {n, 0.2, 0.02}]
```

```
Out[63]=
```



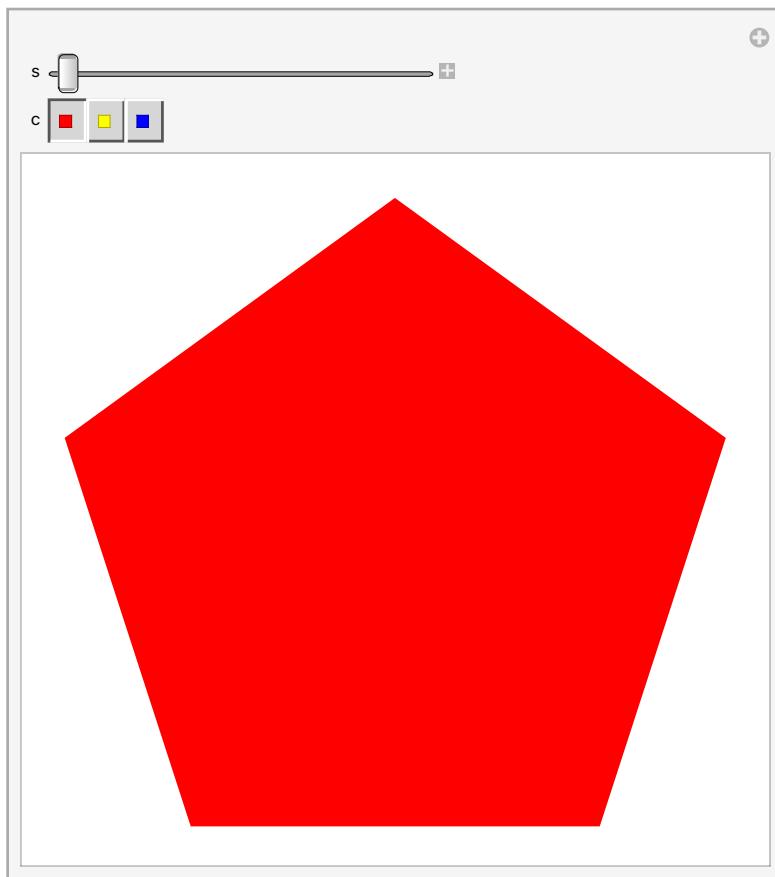
```
In[64]:= Manipulate[Table[Graphics[Style[RegularPolygon[6], Hue[h]]], n], {h, 0, 1}, {n, 1, 10, 1}]
```

Out[64]=



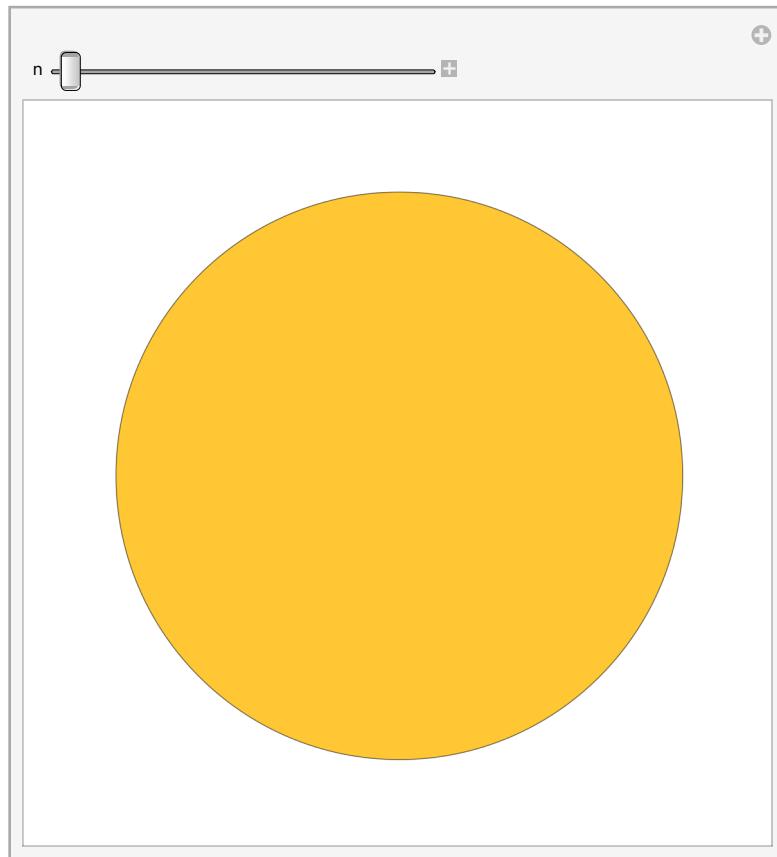
```
In[65]:= Manipulate[Graphics[Style[RegularPolygon[s], {c}]], {s, 5, 20, 1}, {c, {Red, Yellow, Blue}}]
```

Out[65]=



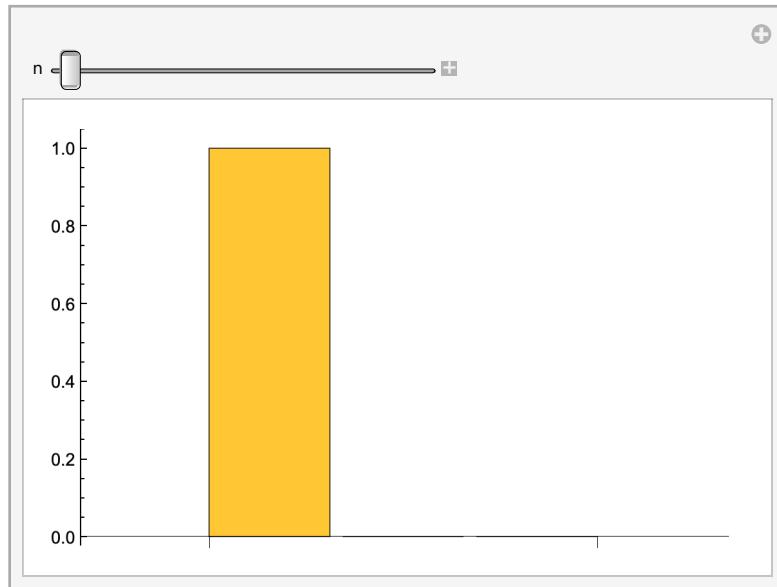
```
In[66]:= Manipulate[PieChart[Table[1, n]], {n, 1, 10, 1}]
```

```
Out[66]=
```



```
In[67]:= Manipulate[BarChart[IntegerDigits[n]], {n, 100, 999, 1}]
```

```
Out[67]=
```



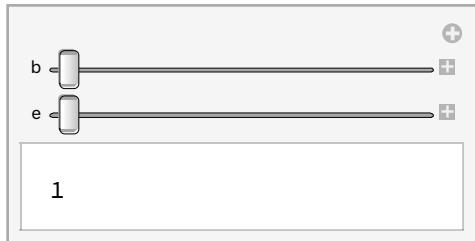
```
In[68]:= Manipulate[RandomColor[n], {n, 1, 50, 1}]
```

```
Out[68]=
```



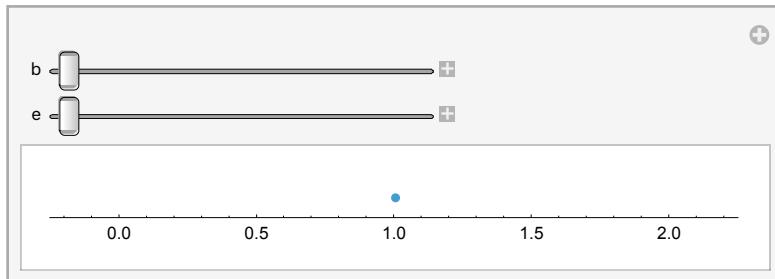
```
In[69]:= Manipulate[b^e, {b, 1, 25, 1}, {e, 1, 10, 1}]
```

```
Out[69]=
```



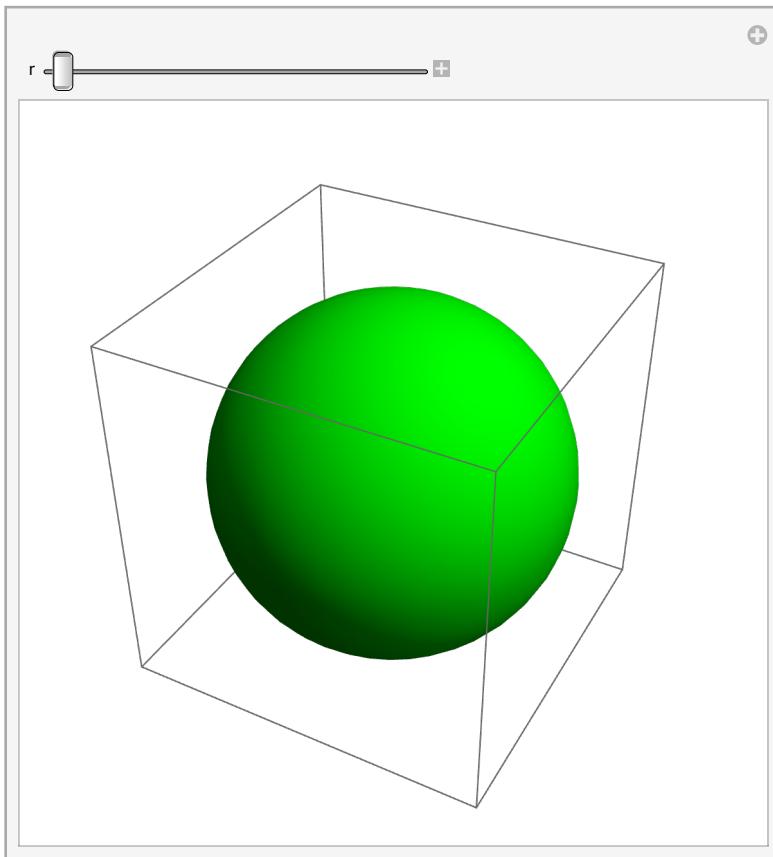
```
In[70]:= Manipulate[NumberLinePlot[Range[b]^e], {b, 1, 10, 1}, {e, 0, 5, 1}]
```

```
Out[70]=
```



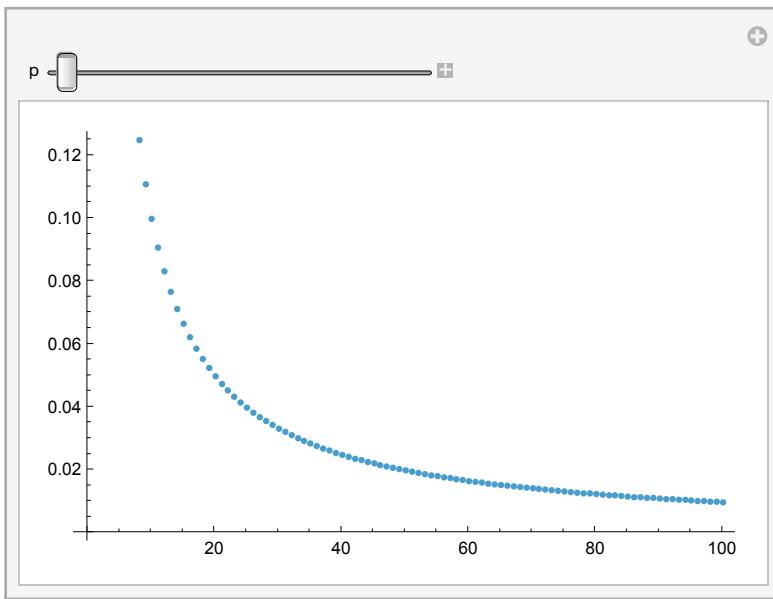
```
In[71]:= Manipulate[Graphics3D[Style[Sphere[], RGBColor[r, 1 - r, 0]]], {r, 0, 1}]
```

```
Out[71]=
```



```
In[72]:= Manipulate[ListPlot[Range[100]^p], {p, -1, 1}]
```

```
Out[72]=
```



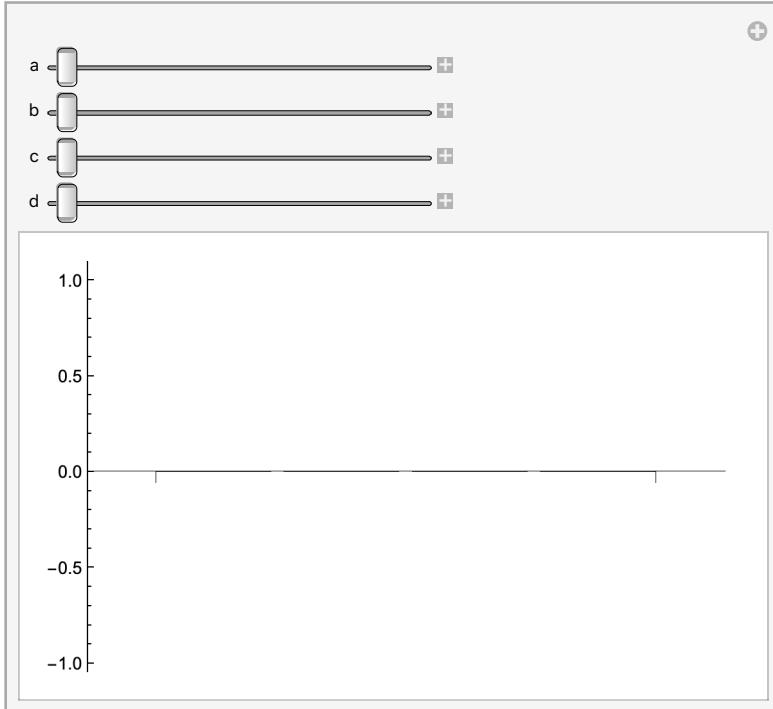
```
In[73]:= Manipulate[Style[1000, s], {s, 5, 100, 1}]
```

```
Out[73]=
```



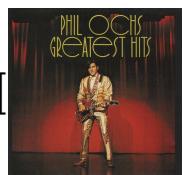
```
In[74]:= Manipulate[BarChart[{a, b, c, d}], {a, 0, 10}, {b, 0, 10}, {c, 0, 10}, {d, 0, 10}]
```

```
Out[74]=
```



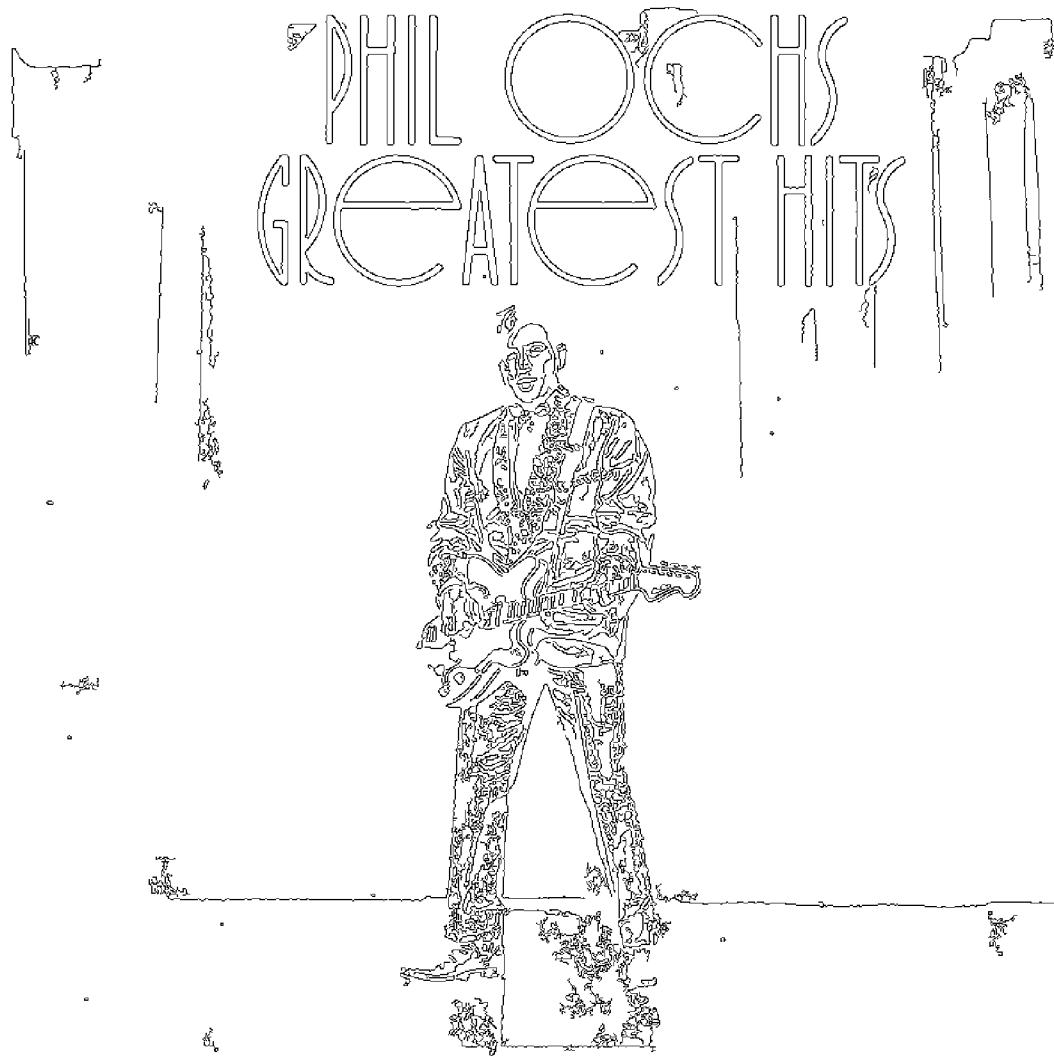
## Section 10

```
In[75]:= ColorNegate[EdgeDetect[
```

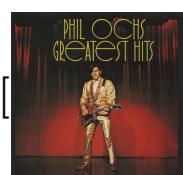


]]

```
Out[75]=
```

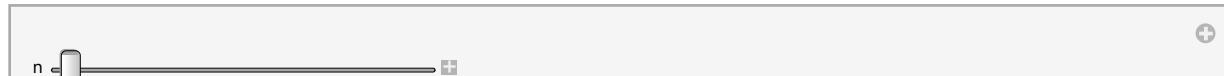


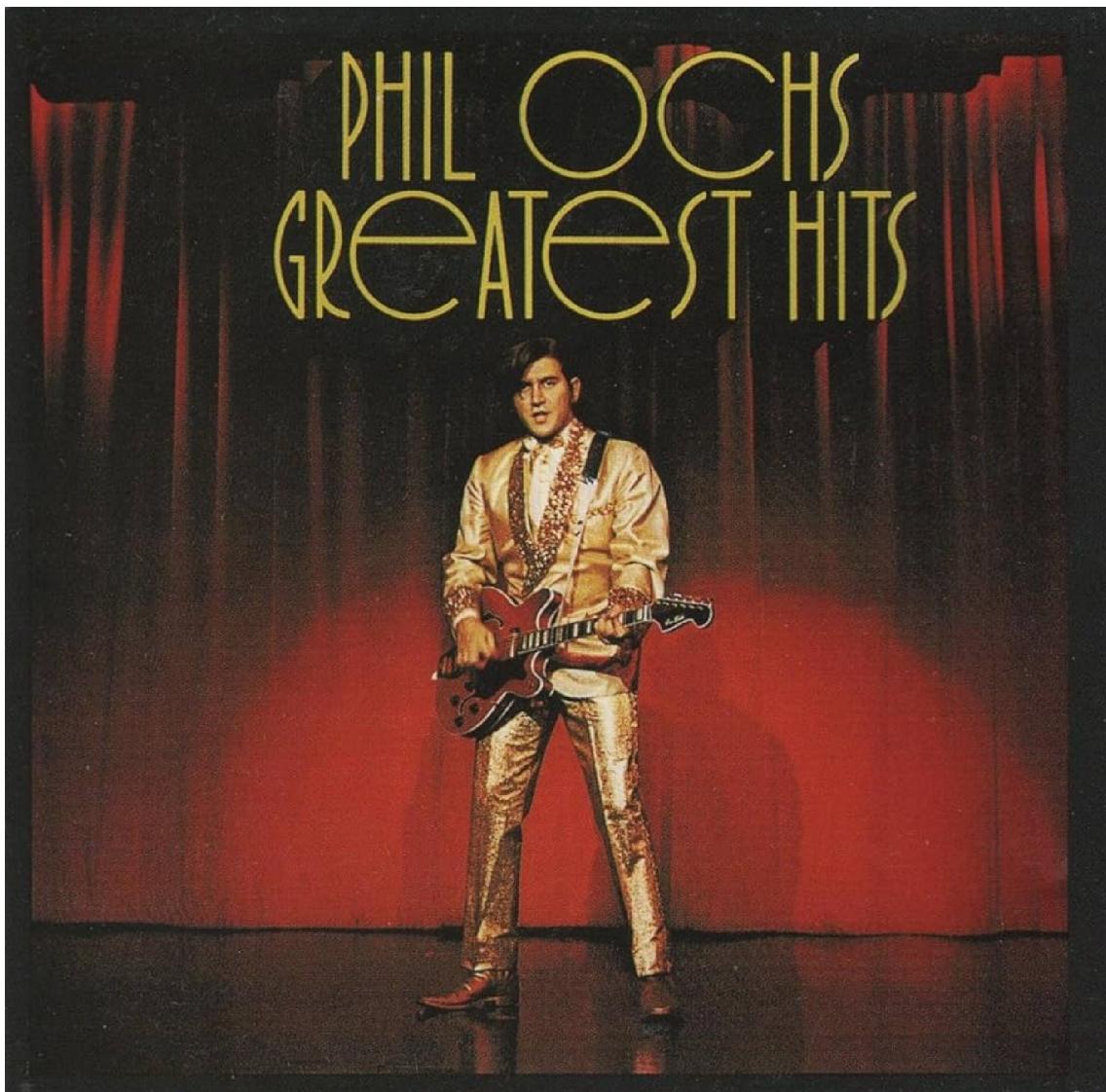
```
In[76]:= Manipulate[Blur[
```



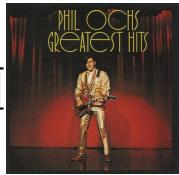
, n], {n, 0, 20}]

```
Out[76]=
```





```
In[77]:= Table[EdgeDetect[Blur[
```



```
, n]], {n, 10}]
```

Out[77]=



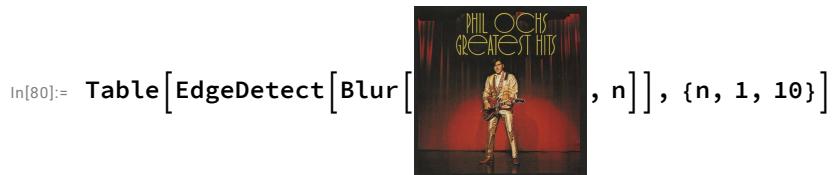
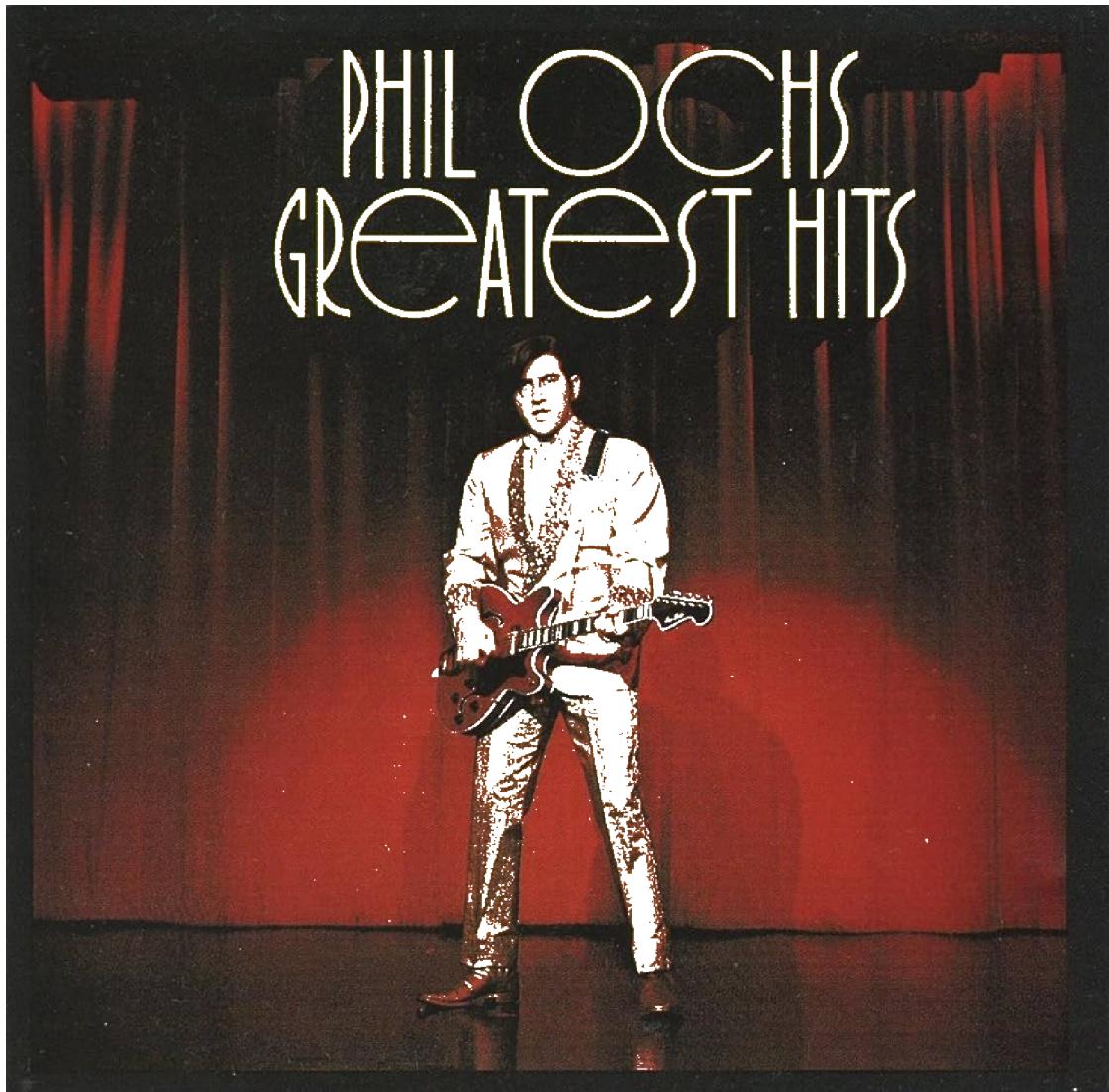


Out[78]=





Out[79]=

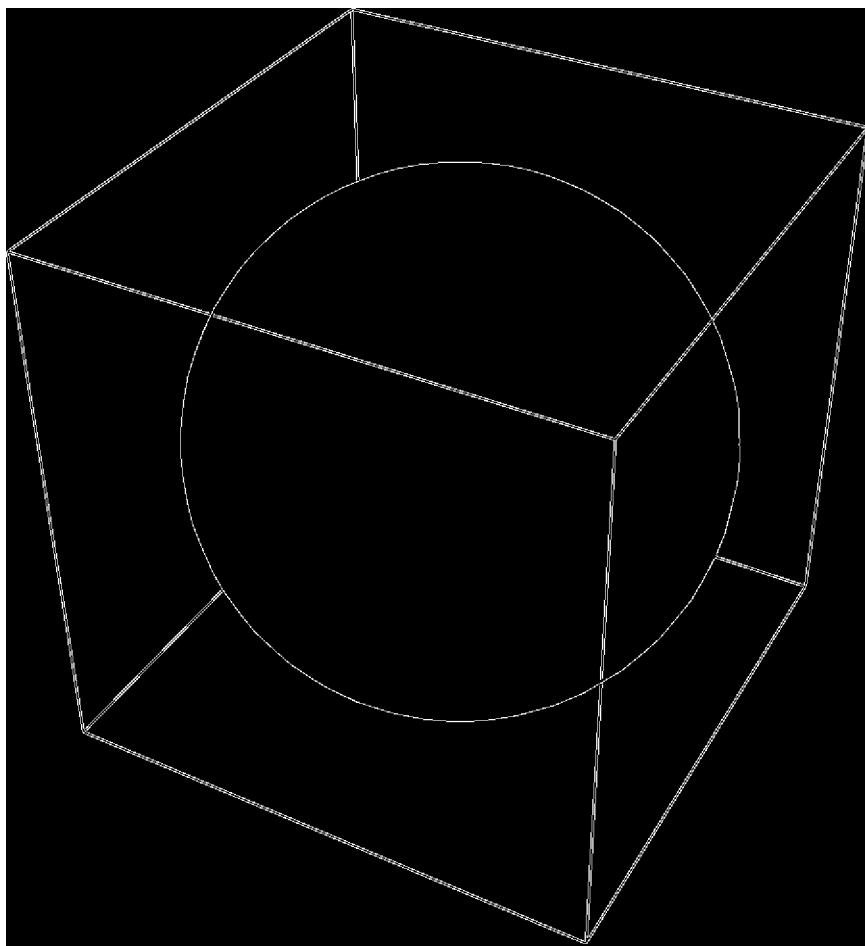


Out[80]=

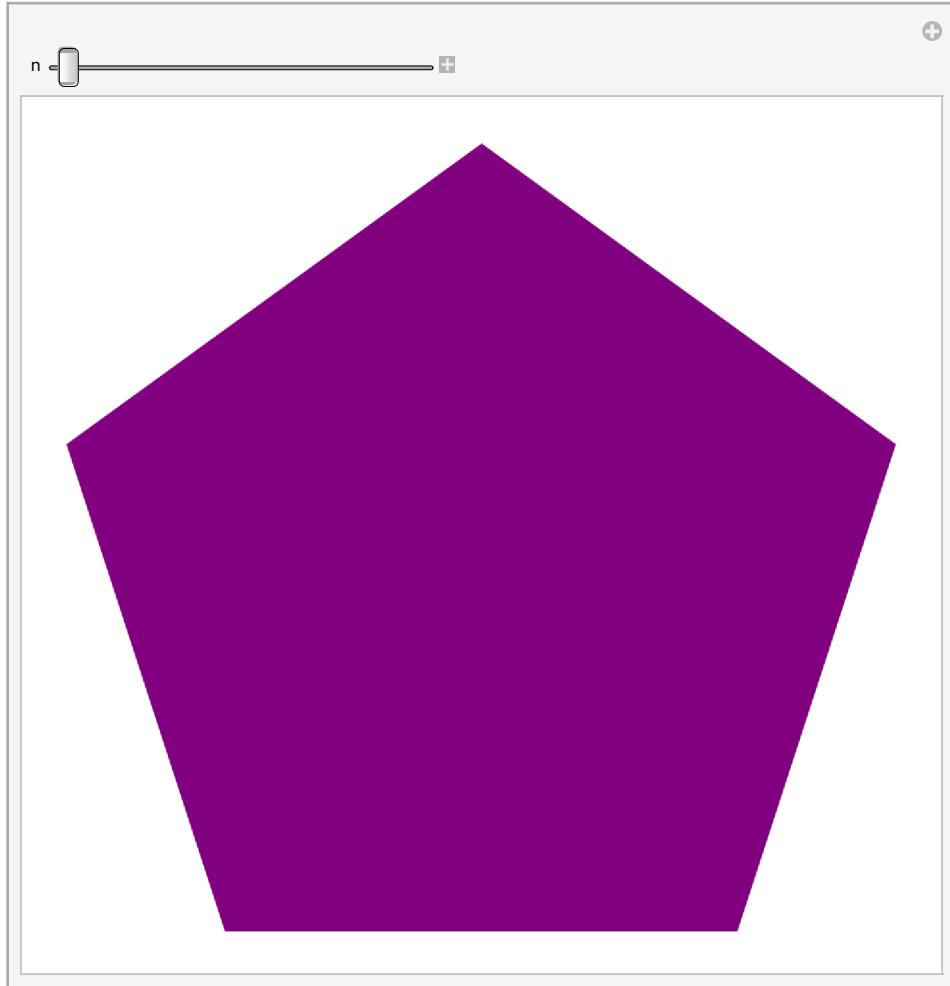


```
In[81]:= EdgeDetect[Graphics3D[Sphere[]]]
```

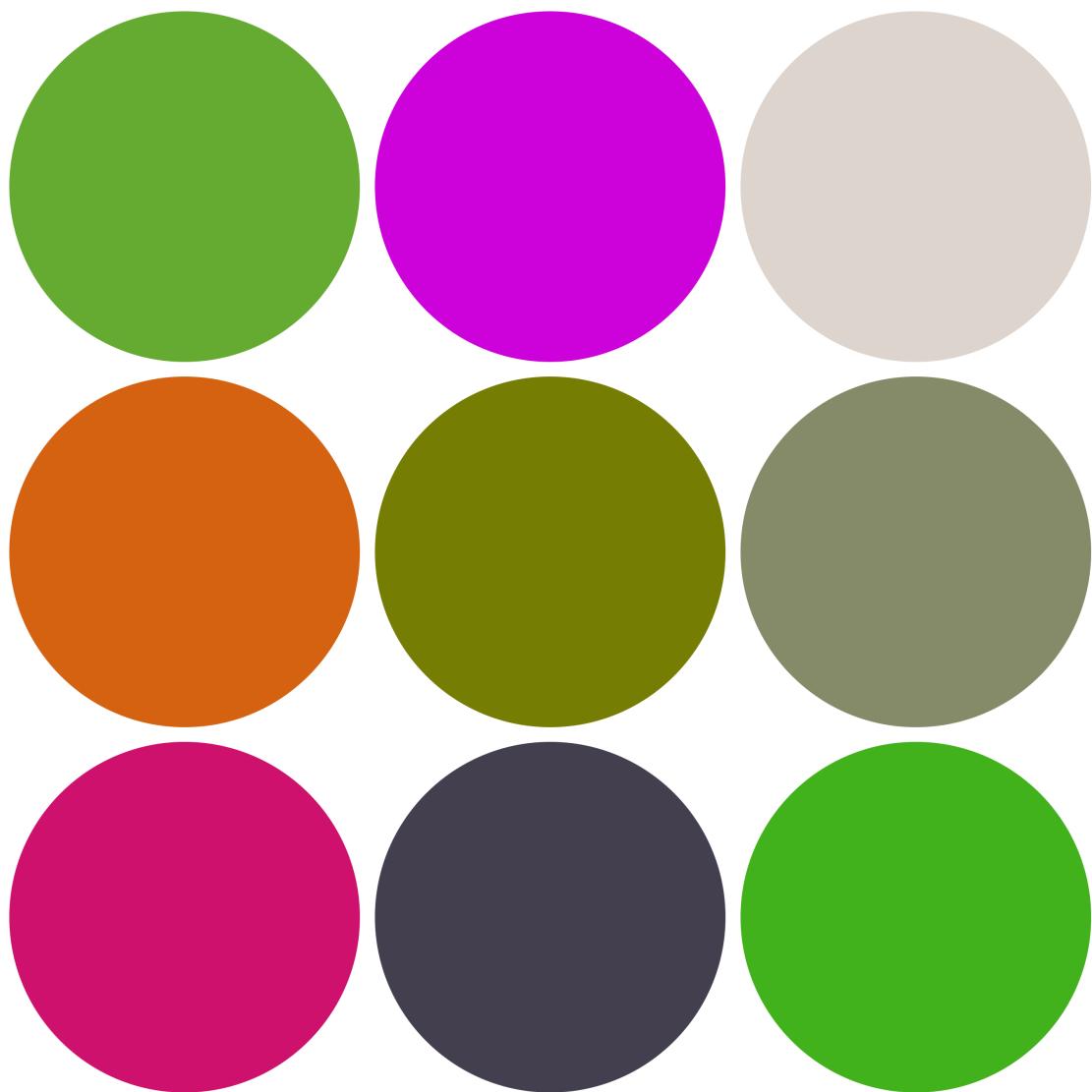
```
Out[81]=
```



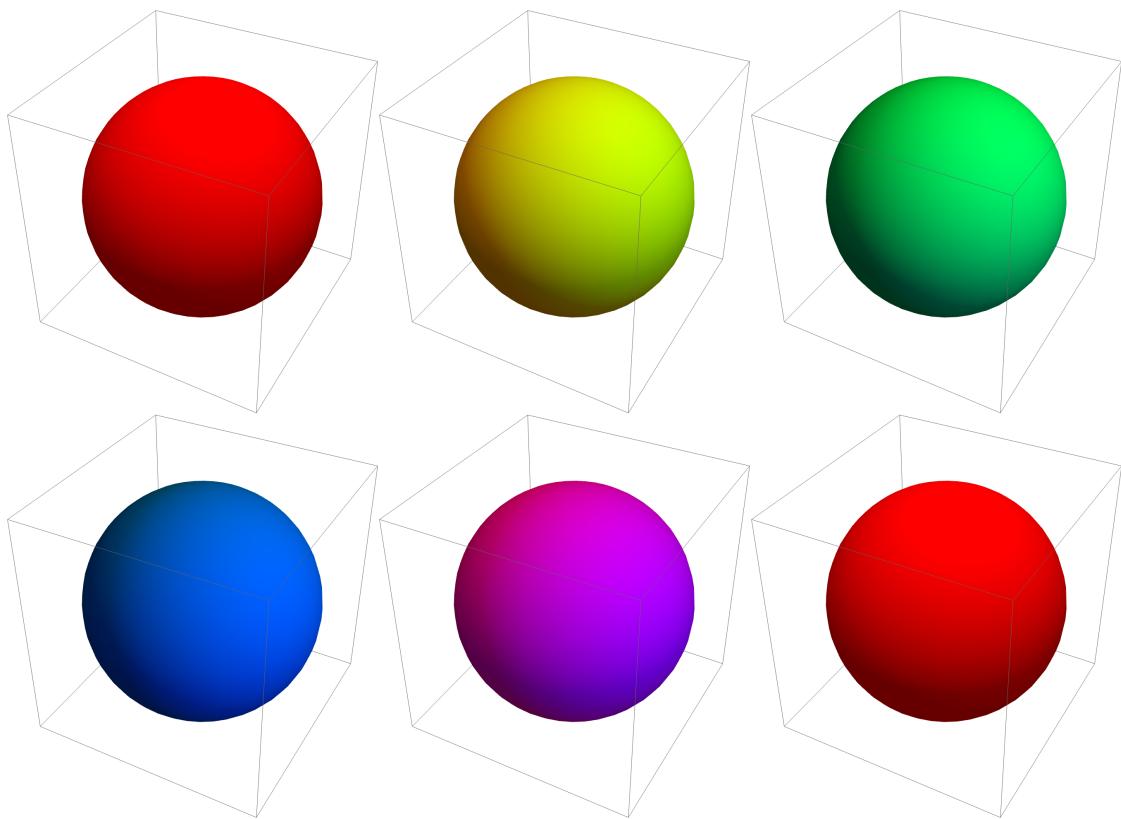
```
In[82]:= Manipulate[Blur[Graphics[Style[RegularPolygon[5], Purple]], n], {n, 0, 20}]  
Out[82]=
```



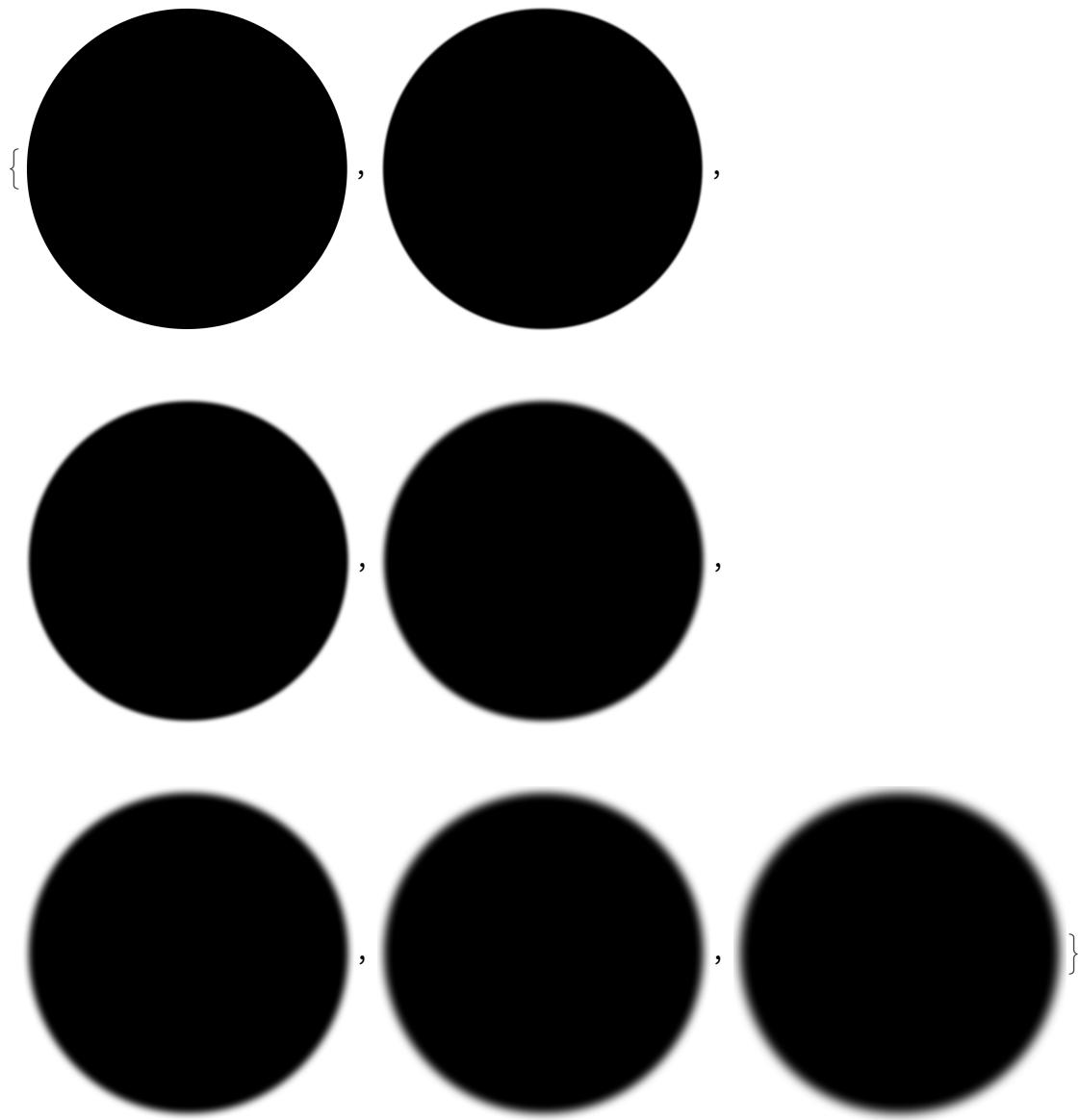
```
In[83]:= ImageCollage[Table[Graphics[Style[Disk[], RandomColor[]]], 9]]  
Out[83]=
```

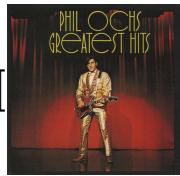


```
In[84]:= ImageCollage[Table[Graphics3D[Style[Sphere[], Hue[n]]], {n, 0, 1, 0.2}]]  
Out[84]=
```



```
In[85]:= Table[Blur[Graphics[Disk[]], n], {n, 0, 30, 5}]  
Out[85]=
```





```
In[86]:= ImageAdd[
```

```
, Graphics[Disk[]]]
```

```
Out[86]=
```





Out[87]=



```
In[88]:= ImageAdd[, ColorNegate[EdgeDetect[

```

Out[88]=



## Section 11 - 11.1-11.15

```
In[89]:= StringJoin["Hello", "Hello"]
Out[89]= HelloHello
```

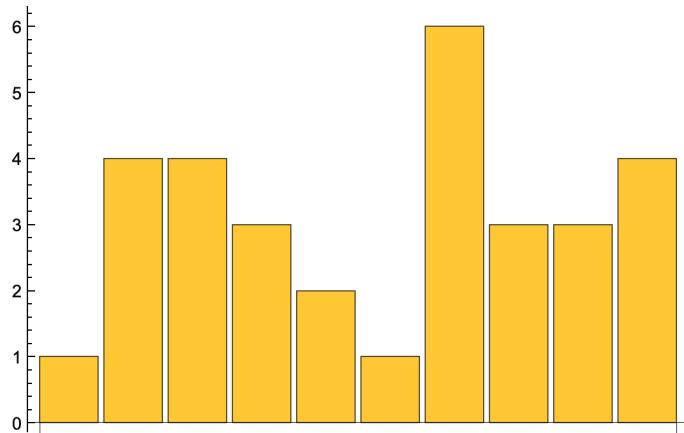
  

```
In[90]:= ToUpperCase[StringJoin[Alphabet[]]]
Out[90]= ABCDEFGHIJKLMNOPQRSTUVWXYZ
```



```
In[96]:= BarChart[StringLength[TextWords["A long time ago, in a galaxy far, far away."]]]
```

```
Out[96]=
```



```
In[97]:= StringLength[WikipediaData["computers"]]
```

```
Out[97]=
```

```
60266
```

```
In[98]:= First[TextSentences[WikipediaData["strings"]]]
```

```
Out[98]=
```

```
String or strings may refer to:
```

```
In[99]:= StringJoin[StringTake[TextSentences[WikipediaData["computers"]], 1]]
```

```
Out[99]=
```

```
AMTTACCESEMTTCTPP=ITTDDBTTT==DTLTTTSITIIDMTAAATTIASIBIAITITIITSI=CCAHTFTTAEBNH
=ITax () 2{, THI=DHTTTTAB==CBTDETTITIRTZTT=PTEITDTTHACIINCTLOTIIIHBT==TTHTVTE=
ECWATIHJTIIAATBAIL=TJFCJTHATHTTWITT=TTDTKIHKNHNPNIWTGFTTWISTITS=TLTTTT=C=A=SH=
TC==ATIET=WTTSC=TSC=TCATRDIRTPIWJSAIT=TES=TTSHTALTSG=
AETTLSIETWOAMTTRACrRIISFIIG=IDOHCIAMA=WTOBITSTBSIT=SMSTSS=SSCICW=T=TTMIAL=
TITHTFMPWSTCBOTOI=ITTSTTITMWITC=PUTTS=MF=ATHHIT=PALTP=ETHOBSA=CTITTCITA"=AWA=
TMH=TQCVSLTTT=ACARPE=AT=====M
```

```
In[100]:=
```

```
Max[StringLength[WordList[]]]
```

```
Out[100]=
```

```
23
```

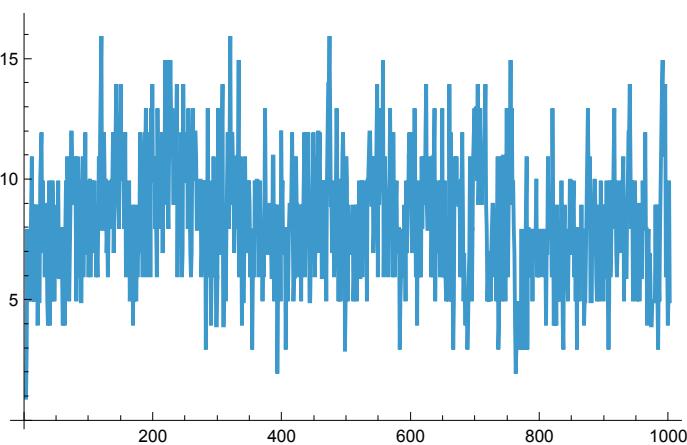
```
In[101]:=
```

```
Count[StringTake[WordList[], 1], "q"]
```

```
Out[101]=
```

```
194
```

```
In[102]:= ListLinePlot[Take[StringLength[WordList[]], 1000]]
```



```
In[103]:= WordCloud[StringTake[WordList[], 1]]
```

