

Hexi—PS3—2025-01-24

Exercises from EIWL3 Section 9

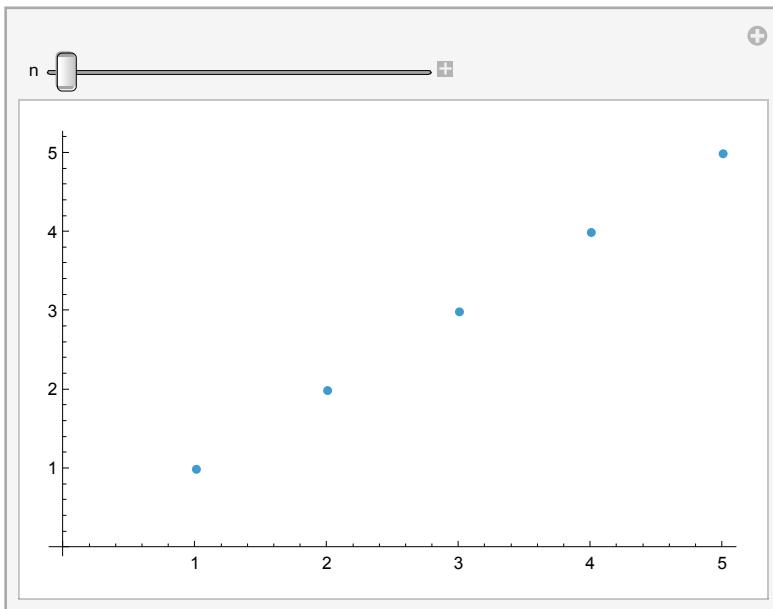
```
In[1]:= Manipulate[Range[n], {n, 0, 100}]
```

```
Out[1]=
```



```
In[2]:= Manipulate[ListPlot[Range[n]], {n, 5, 50}]
```

```
Out[2]=
```

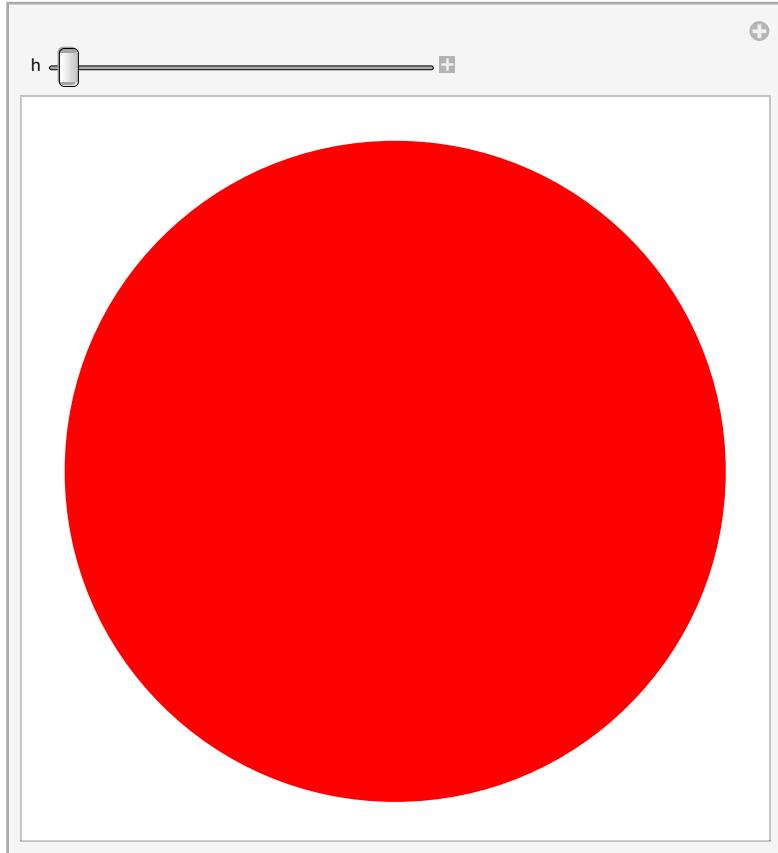


```
In[3]:= Manipulate[Column[Table[x, n]], {n, 1, 10}]
```

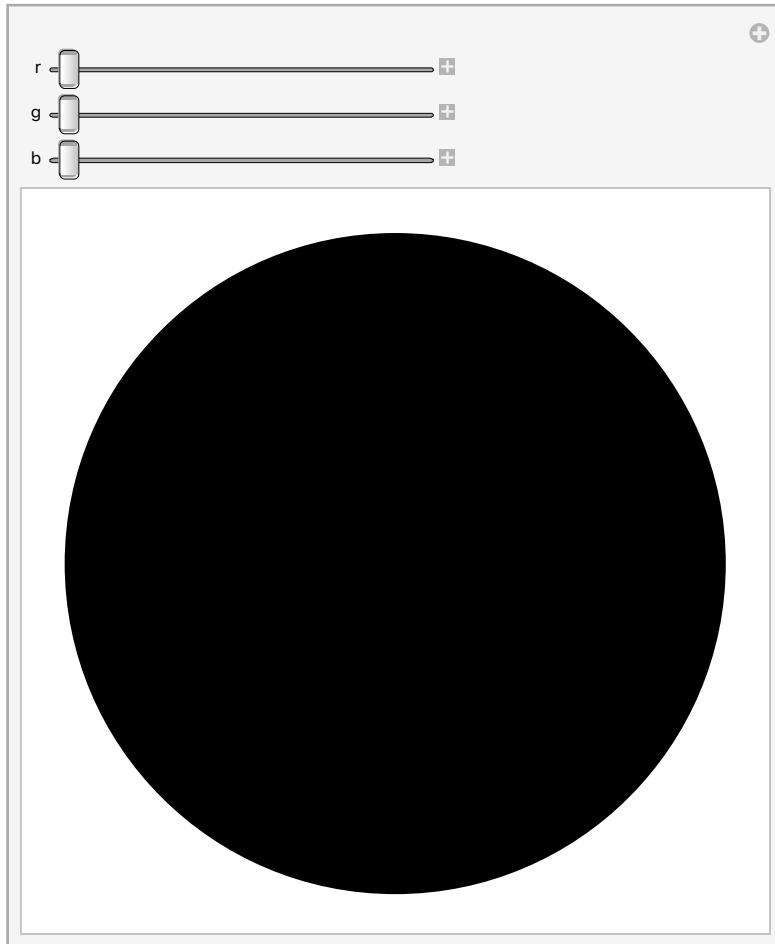
```
Out[3]=
```



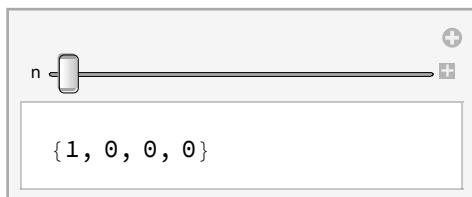
```
In[1]:= Manipulate[Graphics[Style[Disk[], Hue[h]]], {h, 0, 1}]  
Out[1]=
```



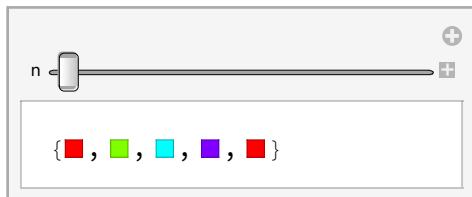
```
In[1]:= Manipulate[Graphics[Style[Disk[], RGBColor[r, g, b]]], {r, 0, 1}, {g, 0, 1}, {b, 0, 1}]  
Out[1]=
```



```
In[2]:= Manipulate[IntegerDigits[n], {n, 1000, 9999}]  
Out[2]=
```

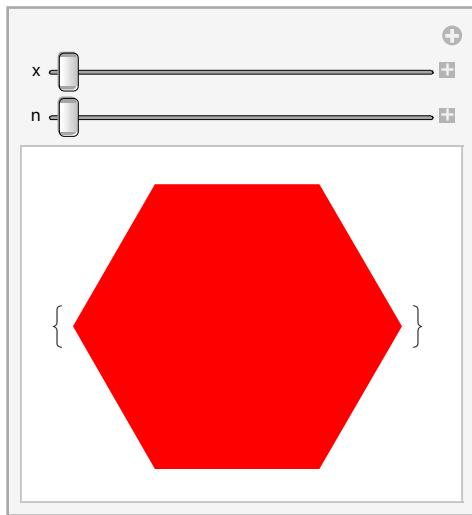


```
In[3]:= Manipulate[Table[Hue[x], {x, 0, 1, (1/(n - 1))}], {n, 5, 50}]  
Out[3]=
```



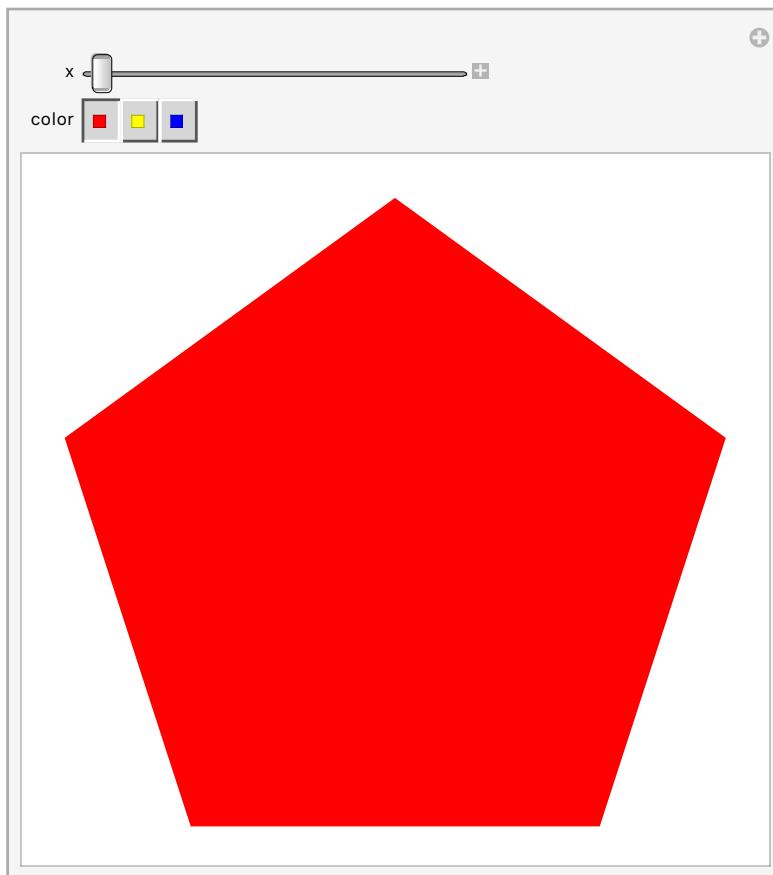
```
In[4]:= Manipulate[Table[Graphics[Style[RegularPolygon[6], Hue[x]]], n], {x, 0, 10}, {n, 1, 10}]
```

Out[4]=



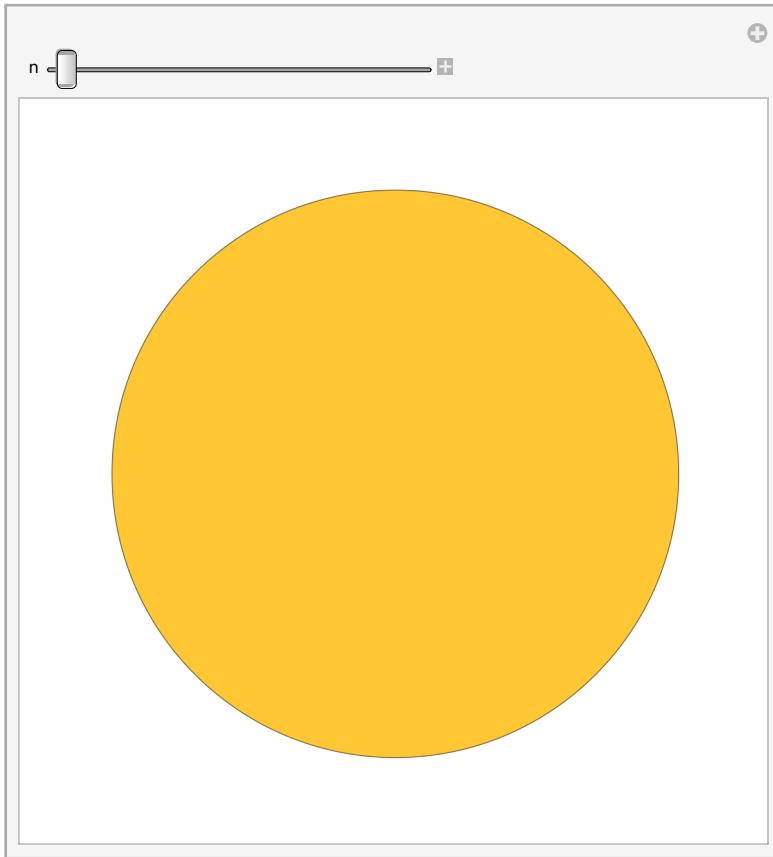
```
In[5]:= Manipulate[Graphics[Style[RegularPolygon[x], color]], {x, 5, 20}, {color, {Red, Yellow, Blue}}]
```

Out[5]=



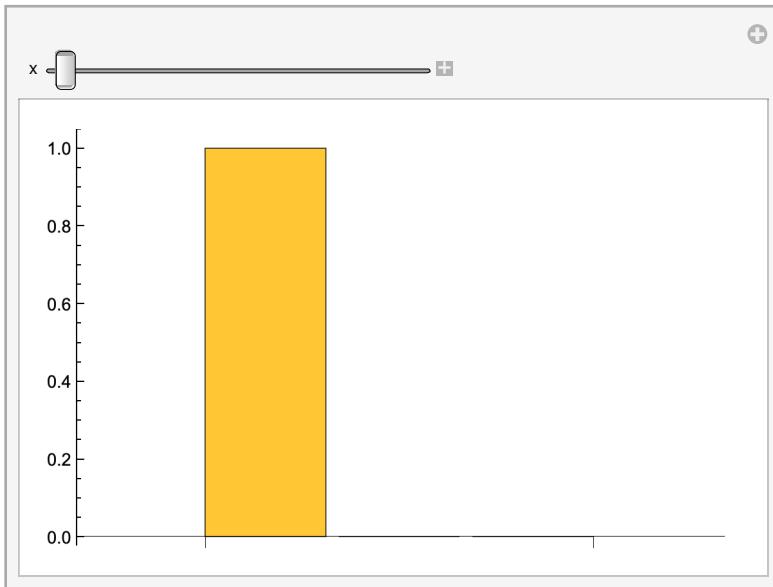
```
In[6]:= Manipulate[PieChart[Table[n, n]], {n, 1, 10}]
```

```
Out[6]=
```



```
In[7]:= Manipulate[BarChart[IntegerDigits[x]], {x, 100, 999, 1}]
```

```
Out[7]=
```



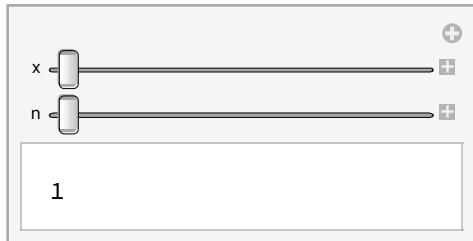
In[6]:= Manipulate[RandomColor[n], {n, 1, 50, 1}]

Out[6]=

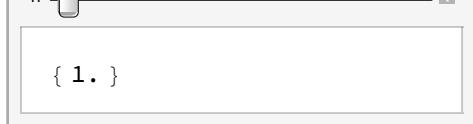


In[7]:= Manipulate[Column[x^Range[n]], {x, 1, 25, 1}, {n, 1, 10, 1}]

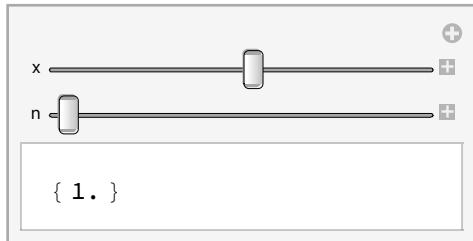
Out[7]=



In[8]:=

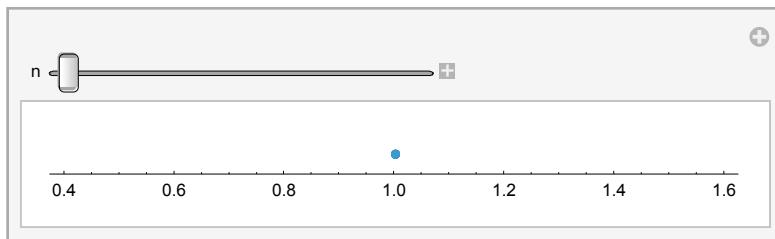


Out[8]=



In[9]:= Manipulate[NumberLinePlot[Range[10]^n], {n, 0, 5}]

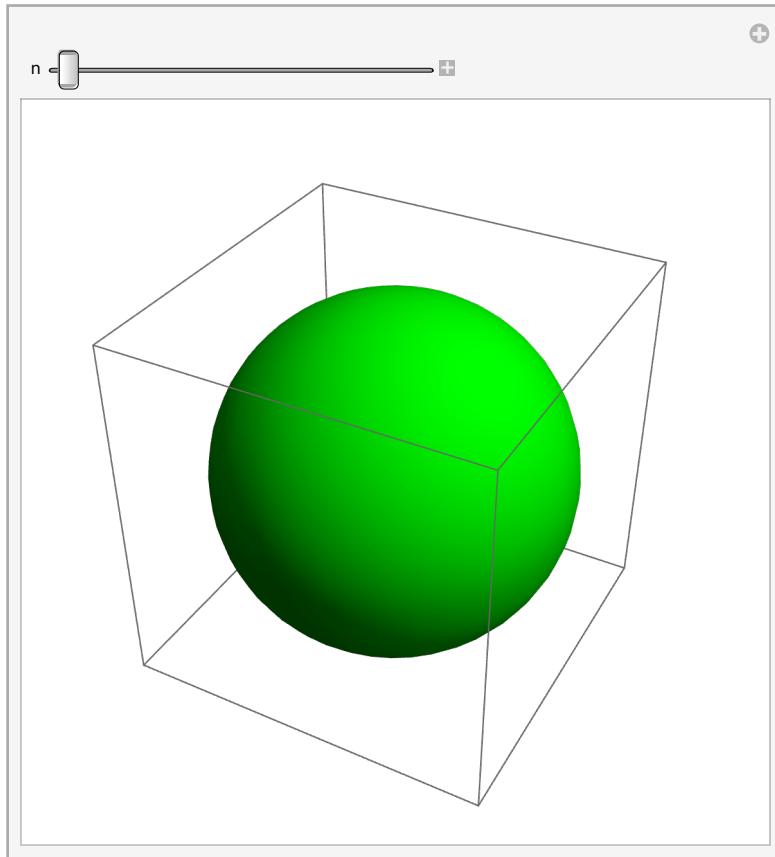
Out[9]=



In[1]:=

```
Manipulate[Graphics3D[Style[Sphere[], RGBColor[n, 1 - n, 0]]], {n, 0, 1}]
```

Out[1]:=

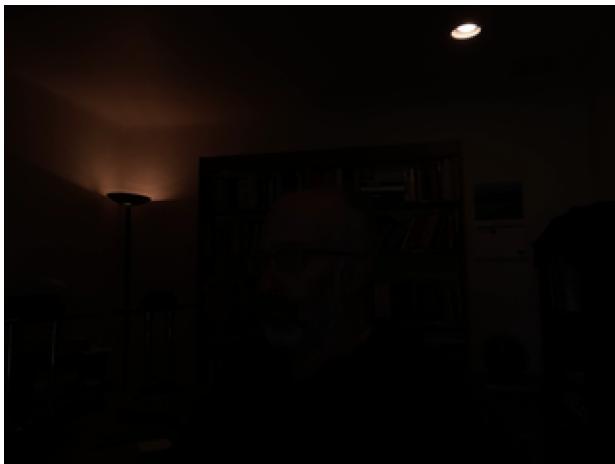


In[2]:=

Exercises from EIWL3 Section 10

In[3]:= CurrentImage[]

Out[3]:=



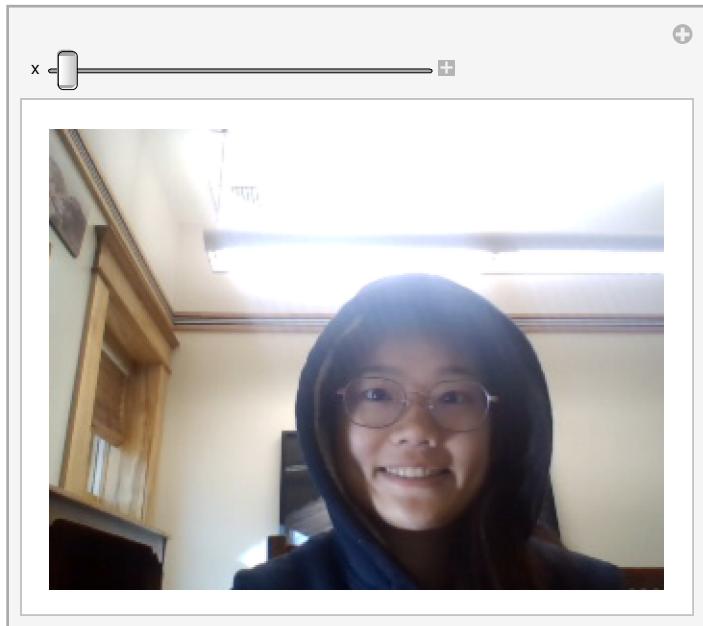
```
In[6]:= ColorNegate[]
```

Out[6]=



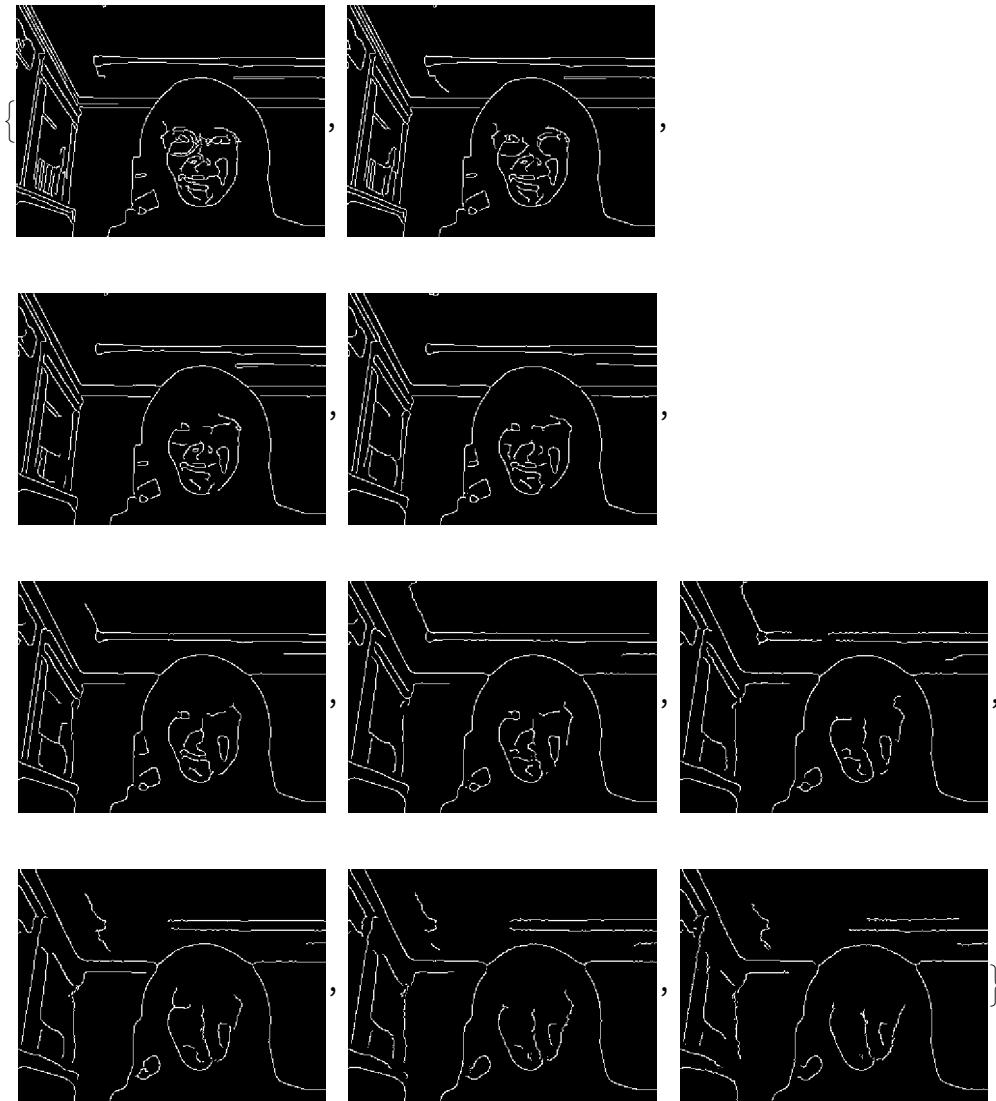
```
In[7]:= Manipulate[Blur[, x], {x, 1, 10}]
```

Out[7]=

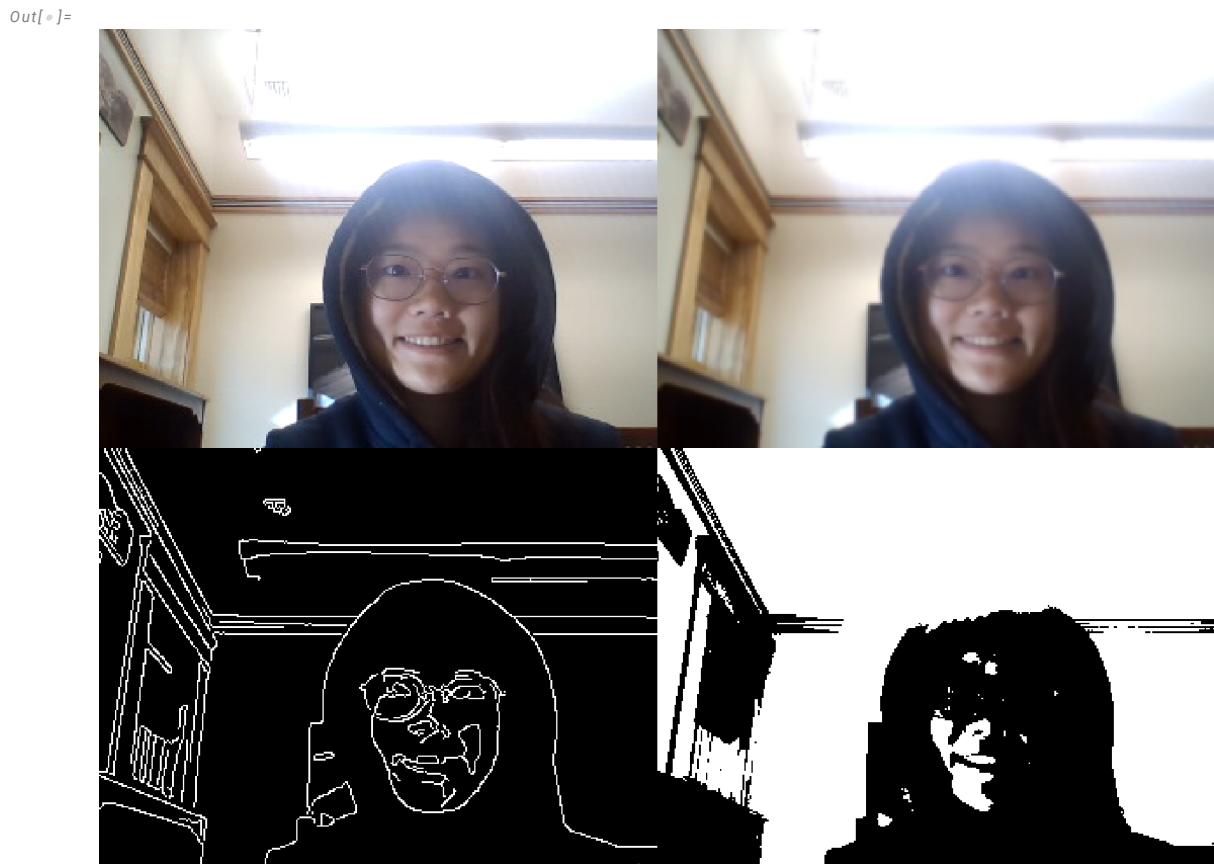


```
In[6]:= Table[EdgeDetect[Blur[
```

Out[6]=



In[•]:= **ImageCollage**[
{, , , }]



In[•]:= **ImageAdd**[, ]]



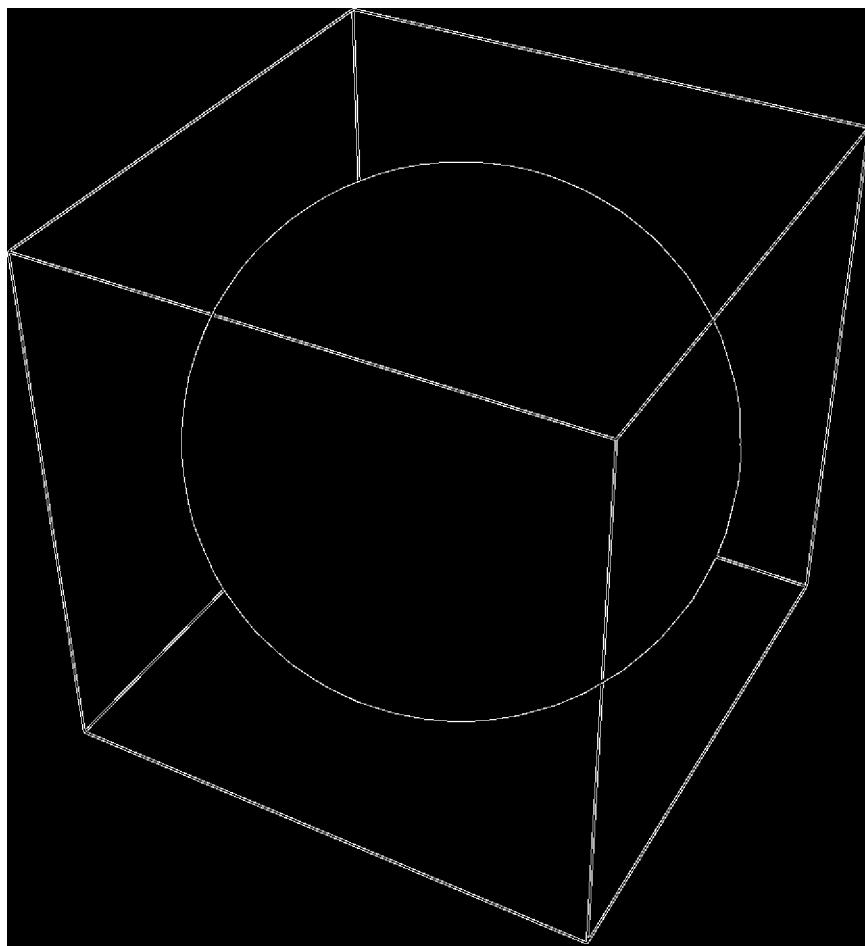
```
In[6]:= Manipulate[EdgeDetect[Blur[, n]], {n, 0, 20}]
```

```
Out[6]=
```

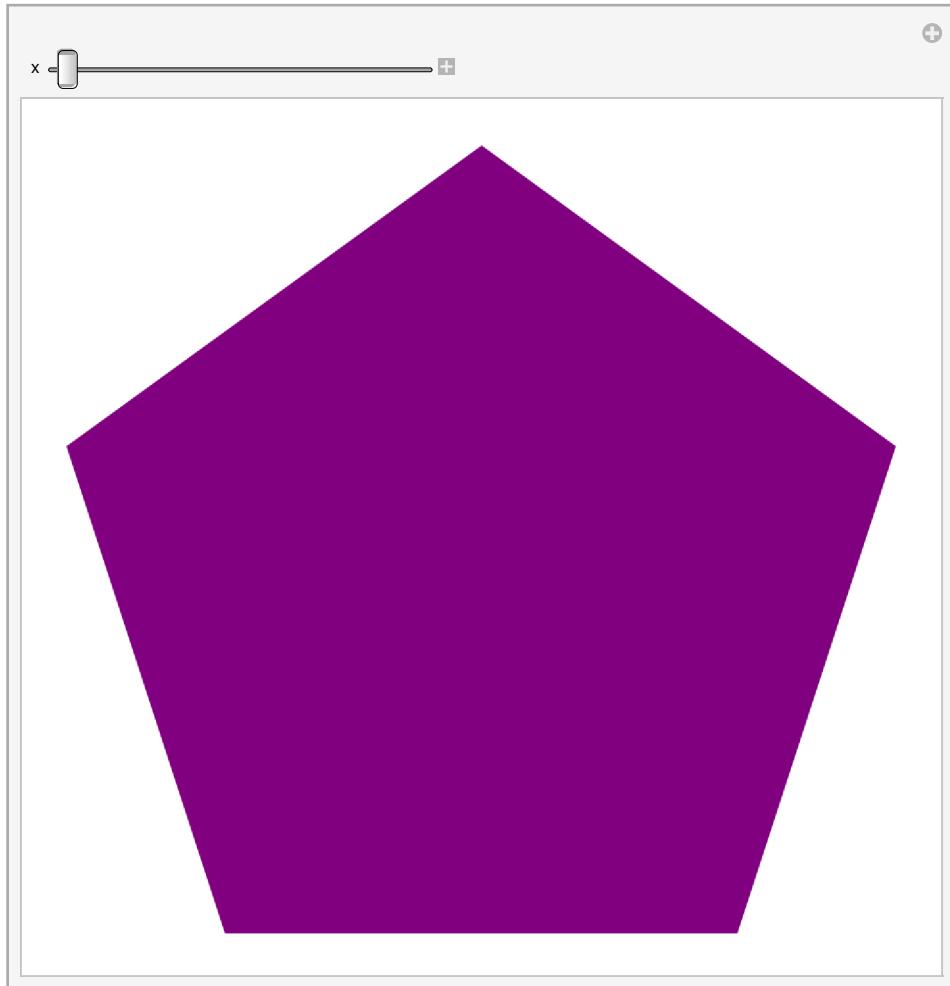


```
In[]:= EdgeDetect[Graphics3D[Sphere[]]]
```

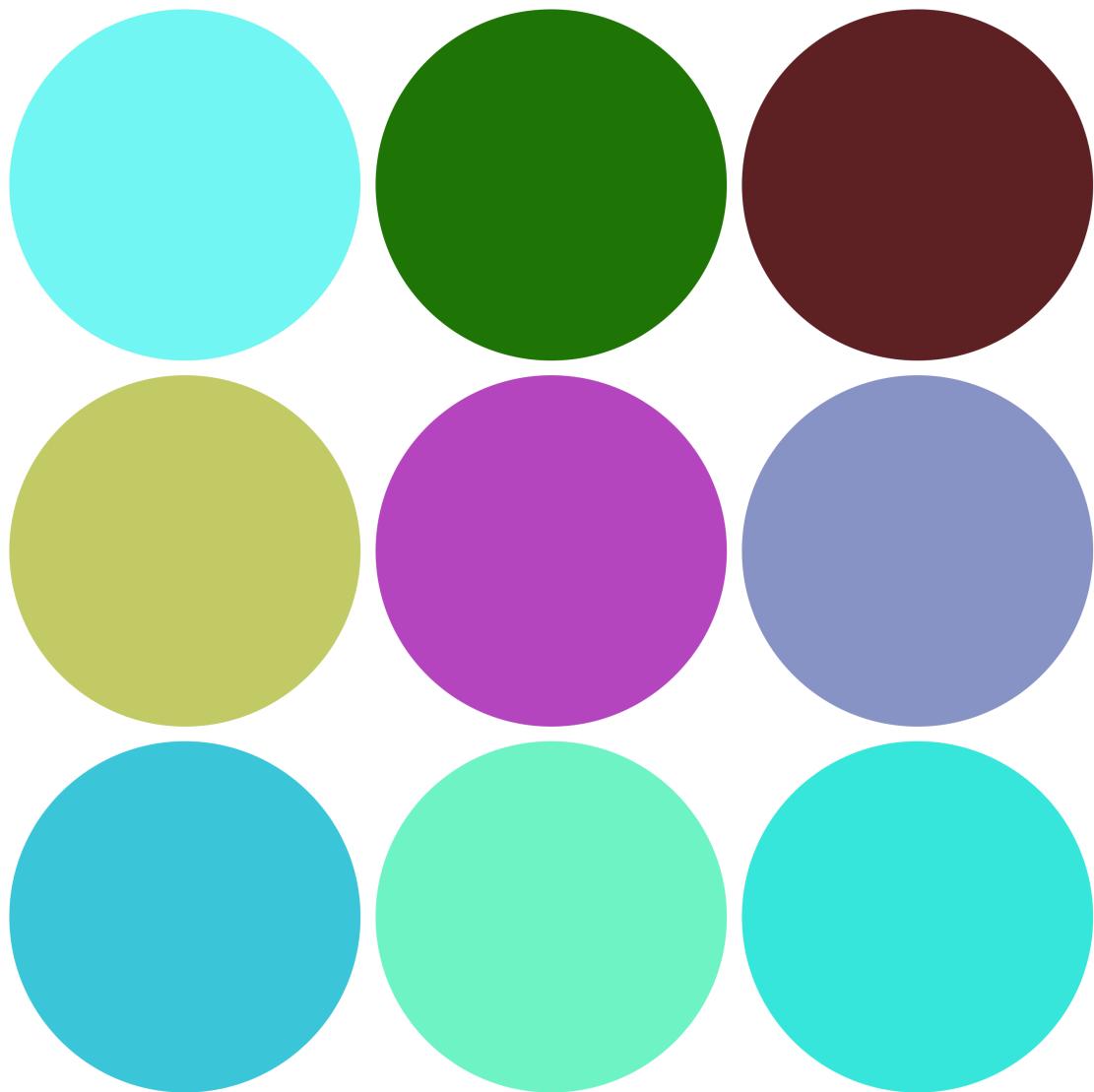
```
Out[]:=
```



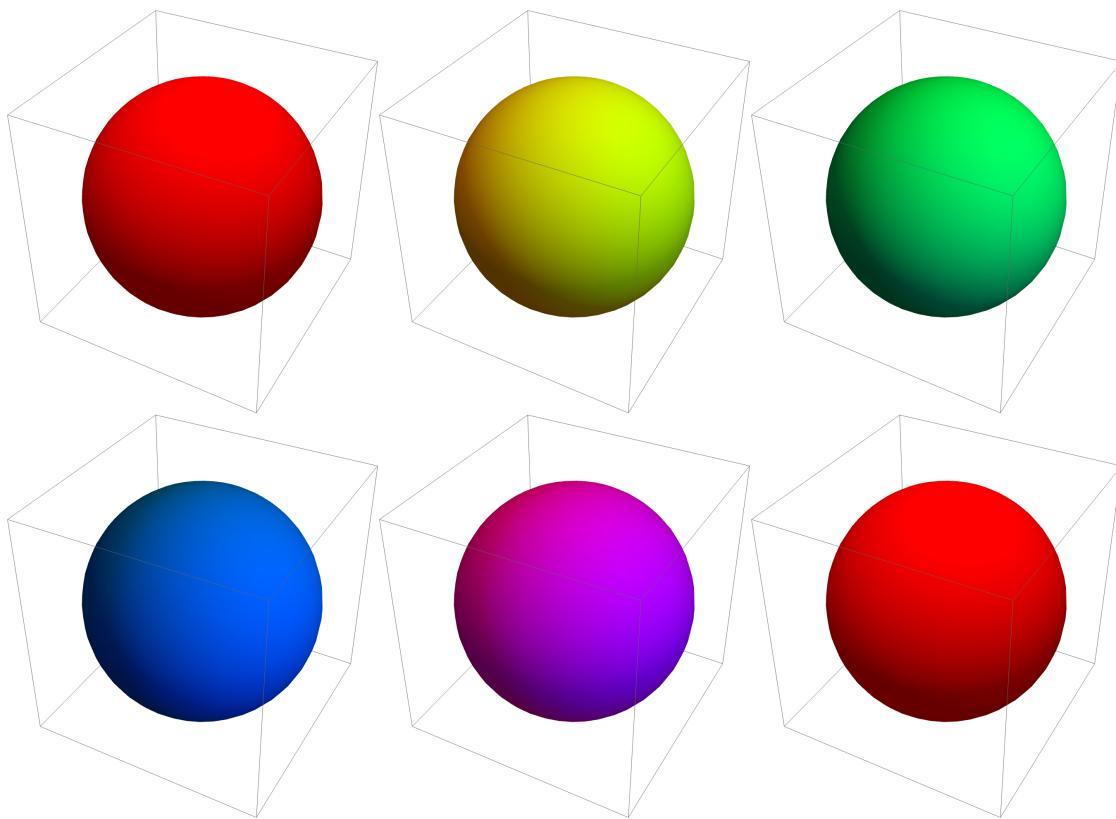
```
In[1]:= Manipulate[Blur[Graphics[Style[RegularPolygon[5], Purple]], x], {x, 0, 20}]  
Out[1]=
```



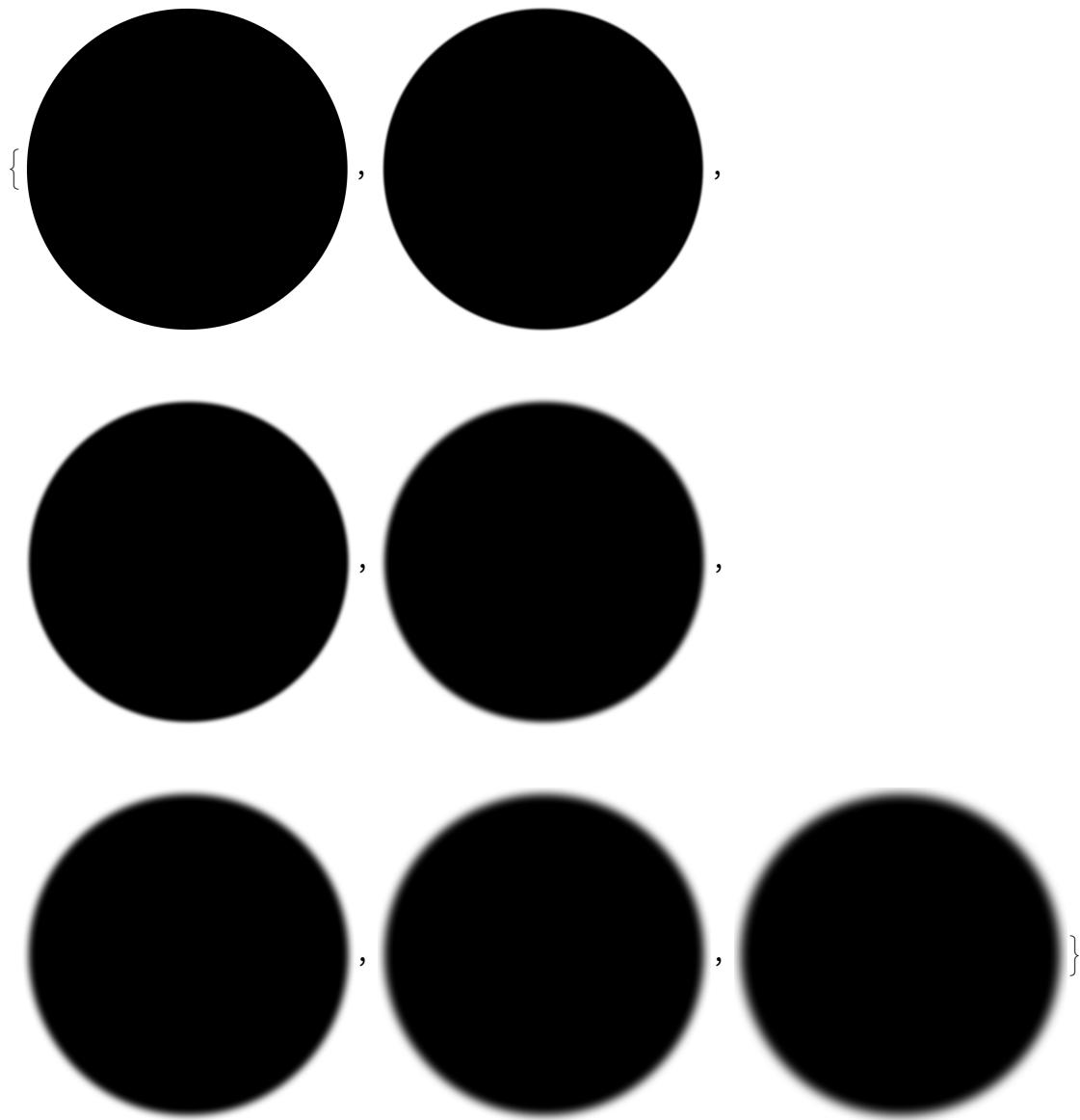
```
In[]:= ImageCollage[Table[Graphics[Style[Disk[], RandomColor[]]], 9]]  
Out[]=
```



```
In[6]:= ImageCollage[Table[Graphics3D[Style[Sphere[], Hue[x]]], {x, 0, 1, 0.2}]]  
Out[6]=
```



```
In[6]:= Table[Blur[Graphics[Disk[]], x], {x, 0, 30, 5}]  
Out[6]=
```



```
In[6]:= ImageAdd[, Graphics[Disk[]]]
```

Out[6]=



```
In[7]:= ImageAdd[, Graphics[Style[RegularPolygon[8], Red]]]
```

Out[7]=



The figure displays a composite image consisting of two photographs of a woman's face side-by-side. The left photograph is a color image, while the right one is a black-and-white version where the edges have been highlighted using the EdgeDetect function. Below this composite image is a detailed line drawing of a building's exterior. The drawing features a prominent circular window with a grid pattern and a door with a handle. The style is architectural and technical.

Exercises from EIWL3 Section 11

```
In[•]:= StringJoin["Hello", "Hello"]
```

Out[•]=

HelloHello

```
In[•]:= ToUpperCase[StringJoin[Alphabet[]]]
```

Out[•]=

ABCDEFGHIJKLMNOPQRSTUVWXYZ

```
In[•]:= StringReverse[StringJoin[Alphabet[]]]
```

Out[1]=

zvxywvutsrqponmlkjihgfedcba

```
In[•]:= StringJoin[Table["AGCT", 100]]
```

Out[•]=

```
In[1]:= StringTake[StringJoin[Alphabet[]], 6]
```

Out[•]=

abcdef

```
In[1]:= "abcdef"

Out[1]= abcdef

In[2]:=StringLength["this is about strings"]
Column[Table[StringTake["this is about strings", x], {x, 21}]]

Out[2]= 21

Out[3]=
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[4]:= BarChart[StringLength[TextWords["A Long time ago, in a galaxy far, far away"]]]
```

Word	Length
A	1
Long	4
time	4
ago	3
in	1
a	1
galaxy	2
far	1
far	1
away	1

```
In[1]:= StringLength[WikipediaData["computer"]]
Out[1]= 60266

In[2]:= Length[TextWords[WikipediaData["computer"]]]
Out[2]= 9271

In[3]:= Take[TextSentences[WikipediaData["strings"]], 1]
Out[3]= {String or strings may refer to:}

In[4]:= StringJoin[StringTake[TextSentences[WikipediaData["computer"]], 1]]
Out[4]= AMTTACCESEMTTCTPP=ITTDDBTTTT==DTLTTTSITIIDMTAAATTIASIBIAITITIITSI=CCAHTFTTAEBNH
=ITax () 2{,THI=DHTTTTAB==CBTDETTITIRTZTT=PTEITDTTHACIINCTLOTIIHBT==TTHTVTE=
ECWATIHJTIIAATBAIL=TJFCJTHATHTTWITT=TTDTKIHKNHNPNIWTGFTTWISTITS=TLTNTTT=C=A=SH=
TC==ATIET=WTTSC=TSC=TCATRDIRTPWIWSAIT=TES=TTSHTALTSG=
AETTLSIETWOAMTTRACrRIIISFIIG=IDOHCIAMA=WTOBITSTBSIT=SMSTSS=SSCICW=T=TTMIAL=
TITHTFMPWSTCBOTOI=ITTSTTITMWITC=PUTTS=MF=ATHHIT=PALTP=ETHOBSA=CTITTITCITA"=AWA=
TMH=TQCVSLTTT=ACARPE=AT=====M

In[5]:= Max[StringLength[TextWords[WordList[]]]]
Out[5]= 23

In[6]:= Count[StringTake[WordList[], 1], "q"]
Out[6]= 194

In[7]:= ListLinePlot[StringLength[Take[WordList[], 1000]]]
Out[7]=
```

```
In[•]:= WordCloud[Characters[StringJoin[WordList[]]]]
```

Out[•]=

