

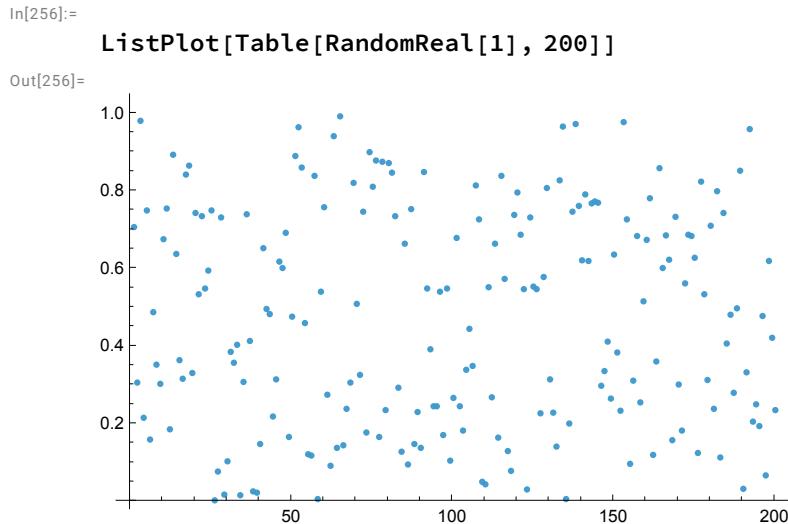
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# Hexi—PS9—2025-02-21

## Exercises from EIWL3 Section 23

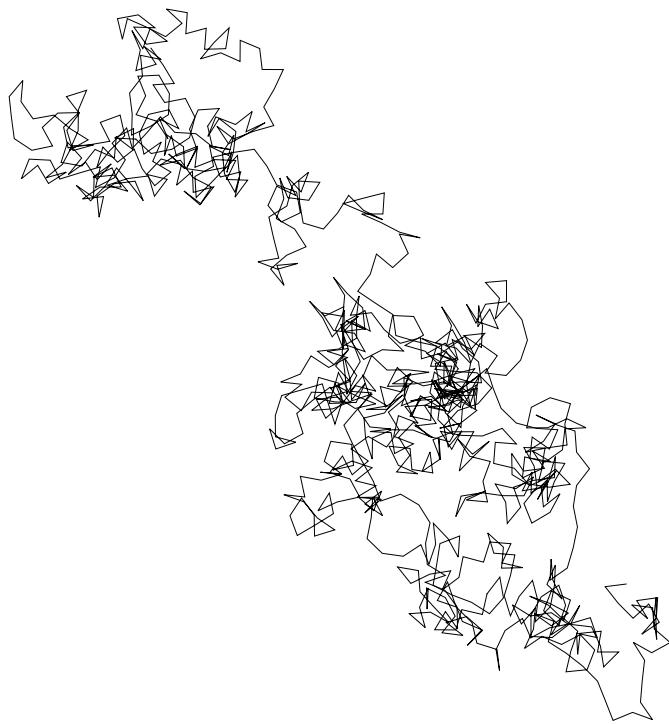
```
In[254]:= N[Sqrt[2], 500]
Out[254]= 1.4142135623730950488016887242096980785696718753769480731766797379907324784621070...
38850387534327641572735013846230912297024924836055850737212644121497099935831413...
22266592750559275579995050115278206057147010955997160597027453459686201472851741...
86408891986095523292304843087143214508397626036279952514079896872533965463318088...
29640620615258352395054745750287759961729835575220337531857011354374603408498847...
16038689997069900481503054402779031645424782306849293691862158057846311159666871...
30130156185689872372
```

```
In[255]:= Table[RandomReal[1], 10]
Out[255]= {0.156147, 0.856513, 0.990291, 0.85683,
0.449148, 0.91963, 0.557978, 0.208797, 0.399471, 0.231085}
```



In[257]:= **Graphics[Line[AnglePath[RandomReal[{0, 2 Pi}, 1000]]]]**

Out[257]=

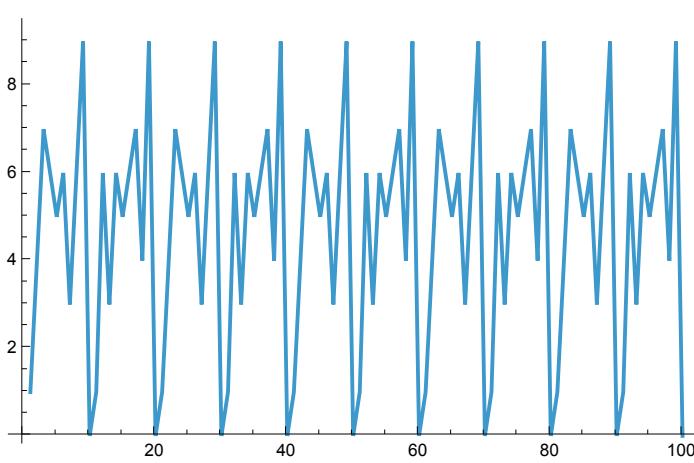


In[258]:= **Table[Mod[n^2, 10], {n, 0, 30}]**

Out[258]= {0, 1, 4, 9, 6, 5, 6, 9, 4, 1, 0, 1, 4, 9, 6, 5, 6, 9, 4, 1, 0, 1, 4, 9, 6, 5, 6, 9, 4, 1, 0}

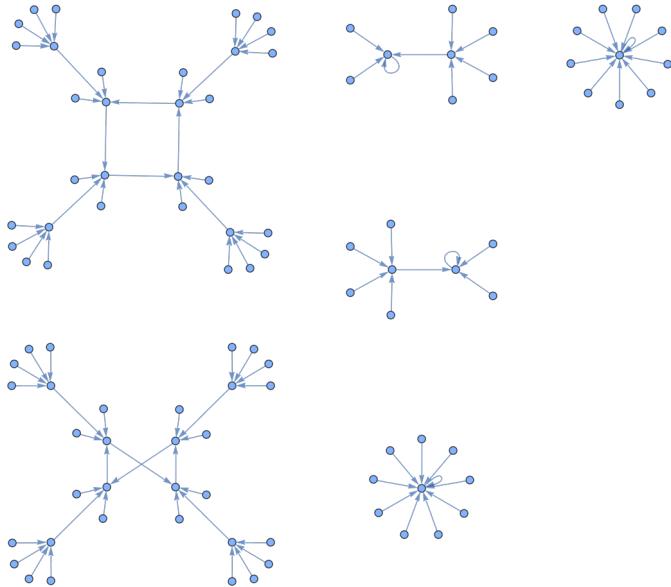
In[259]:= **ListLinePlot[Table[Mod[n^n, 10], {n, 1, 100}]]**

Out[259]=



```
In[260]:= Table[Round[Pi^n], {n, 10}]  
Out[260]= {3, 10, 31, 97, 306, 961, 3020, 9489, 29809, 93648}
```

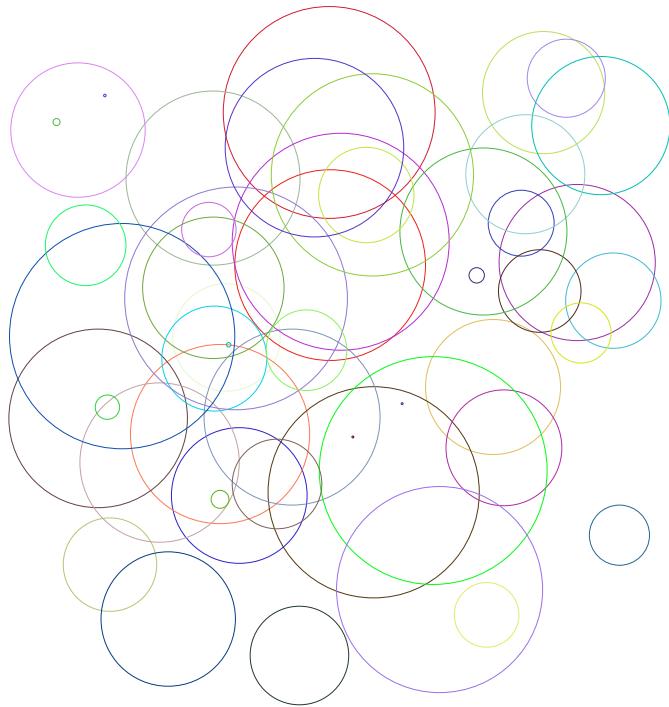
```
In[261]:= Graph[Flatten[Table[n → Mod[n^2, 100], {n, 0, 99}]]]  
Out[261]=
```



In[262]:=

```
Graphics[Table[Style[
  Circle[{RandomReal[10], RandomReal[10]}, RandomReal[2]], RandomColor[], 50]]
```

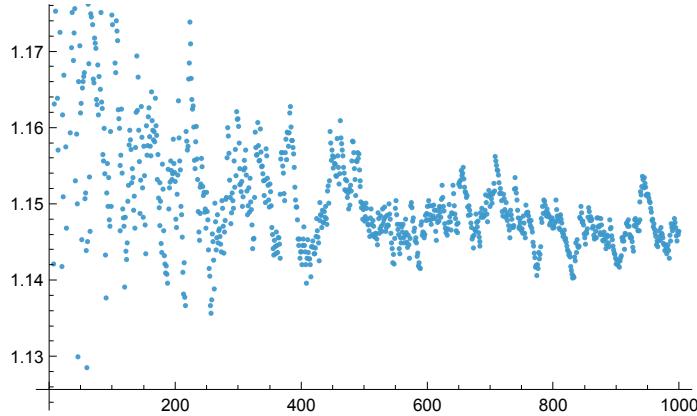
Out[262]=



In[263]:=

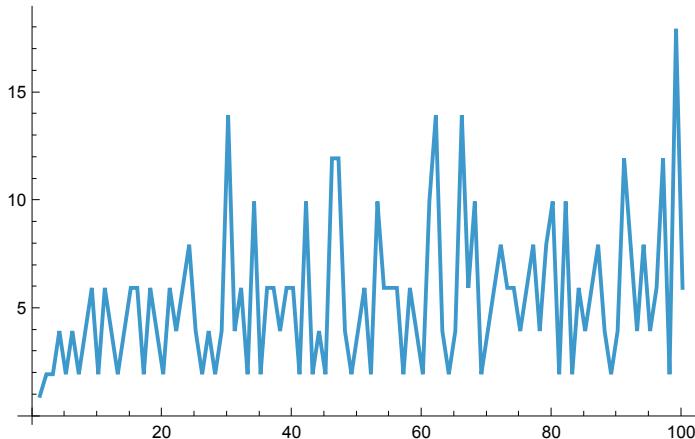
```
ListPlot[Table[Prime[n]/n Log[n], {n, 2, 1000}]]
```

Out[263]=



```
In[264]:= ListLinePlot[Table[Prime[n + 1] - Prime[n], {n, 100}]]
```

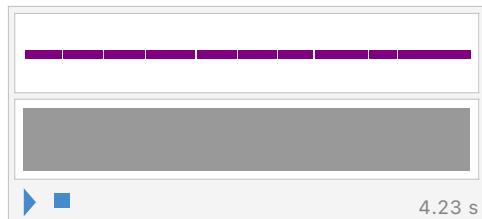
```
Out[264]=
```



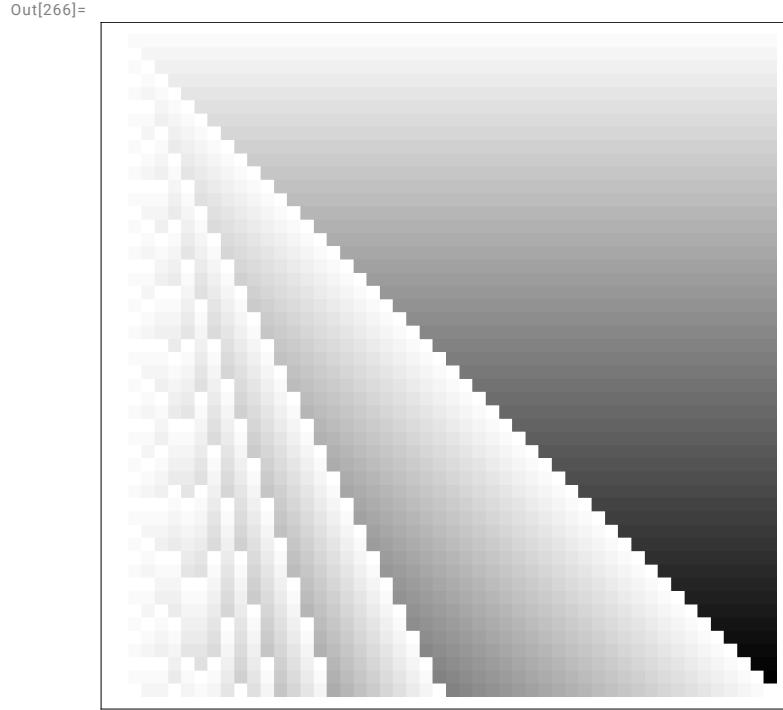
```
In[265]:=
```

```
Sound[Table[SoundNote["C", RandomReal[0.5]], 20]]
```

```
Out[265]=
```



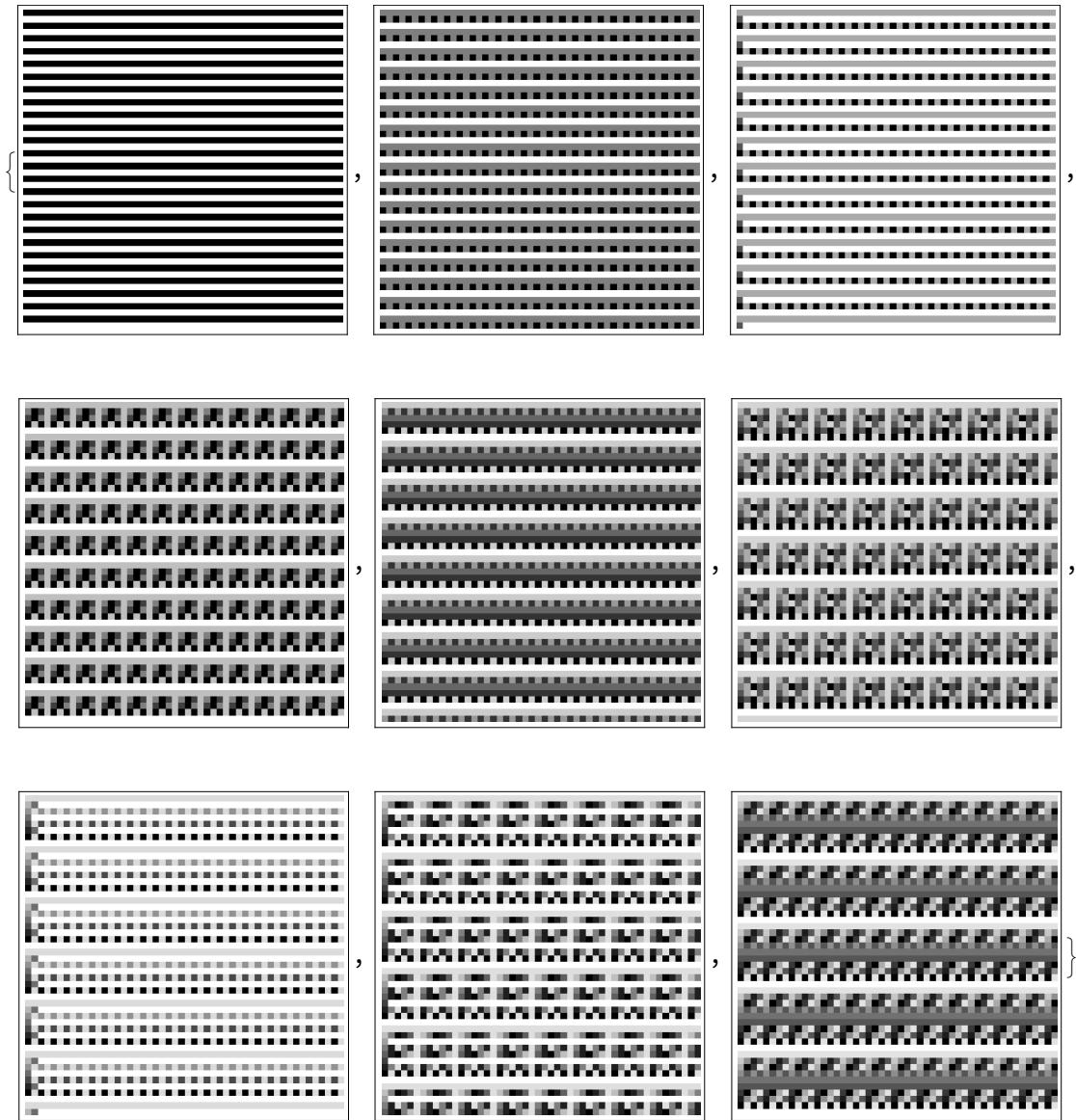
```
In[266]:= ArrayPlot[Table[Mod[i, j], {i, 50}, {j, 50}]]
```



In[267]:=

```
Table[ArrayPlot[Table[Mod[x^y, n], {x, 50}, {y, 50}]], {n, 2, 10}]
```

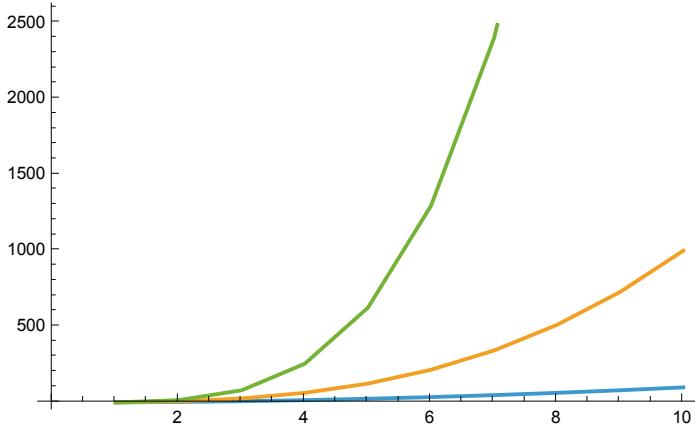
Out[267]=



## Exercises from EIWL3 Section 24

```
In[268]:= ListLinePlot[{Table[x^2, {x, 10}], Table[x^3, {x, 10}], Table[x^4, {x, 10}]}]
```

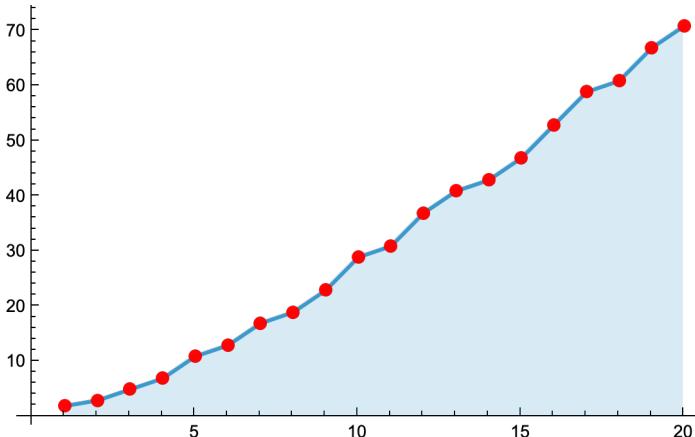
```
Out[268]=
```



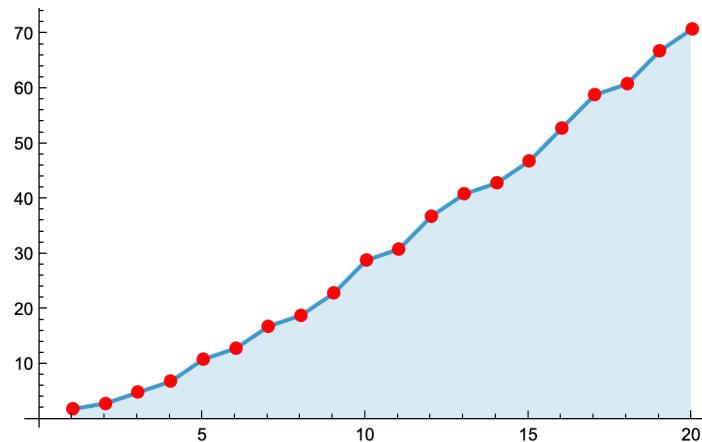
```
In[269]:=
```

```
ListLinePlot[Table[Prime[x], {x, 20}], Filling -> Axis, Mesh -> All, MeshStyle -> Red]
```

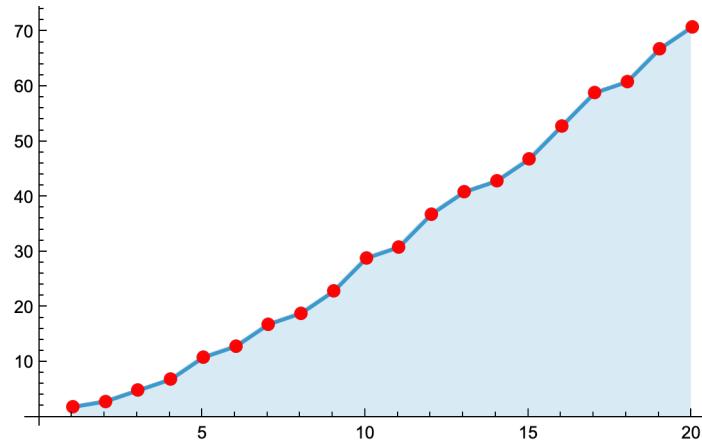
```
Out[269]=
```



In[270]:=



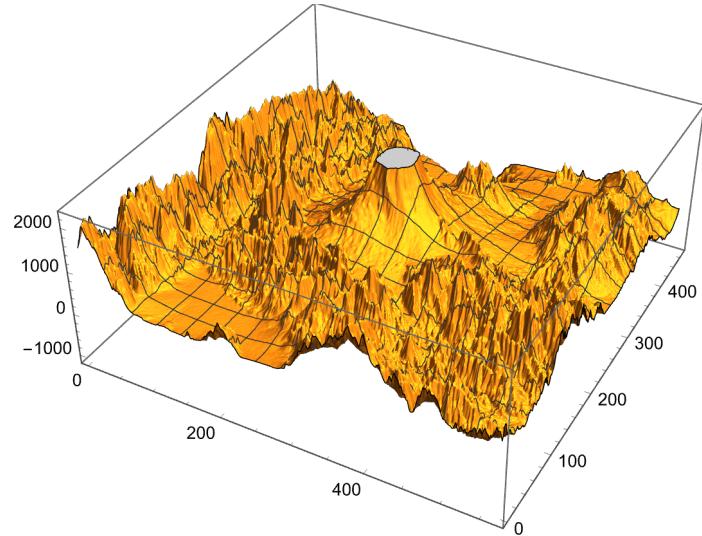
Out[270]=



In[271]:=

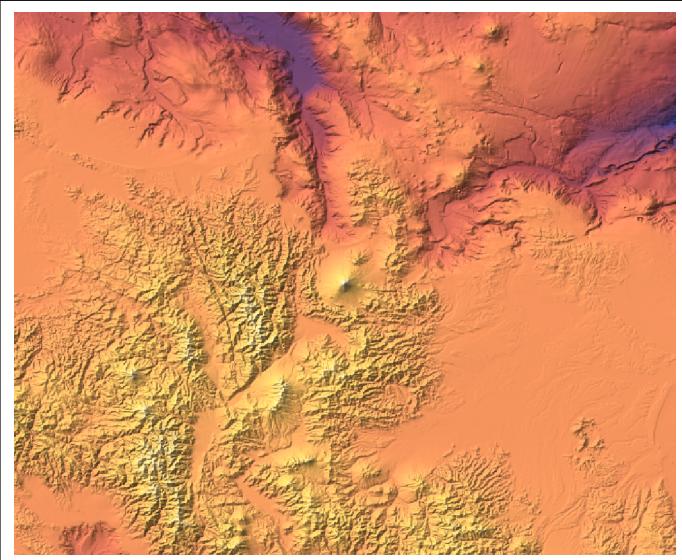
```
ListPlot3D[GeoElevationData[GeoDisk[Mount Fuji MOUNTAIN, 20 mi]]]
```

Out[271]=



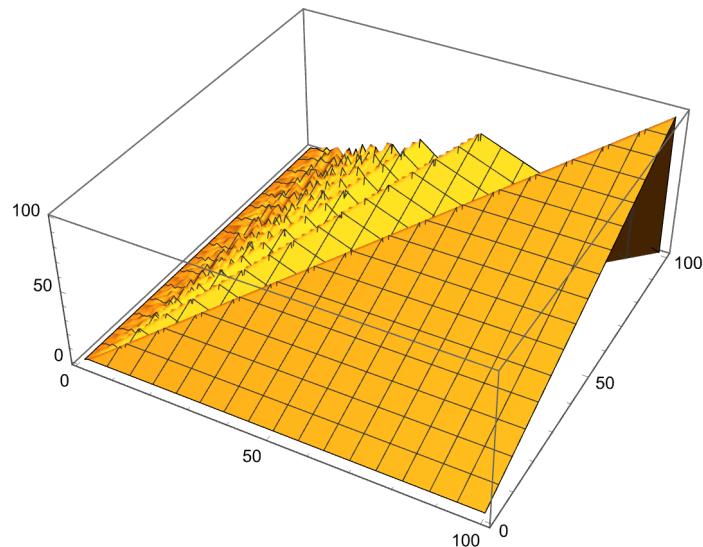
```
In[272]:= ReliefPlot[GeoElevationData[GeoDisk[Mount Fuji MOUNTAIN, 100 mi]]]
```

```
Out[272]=
```

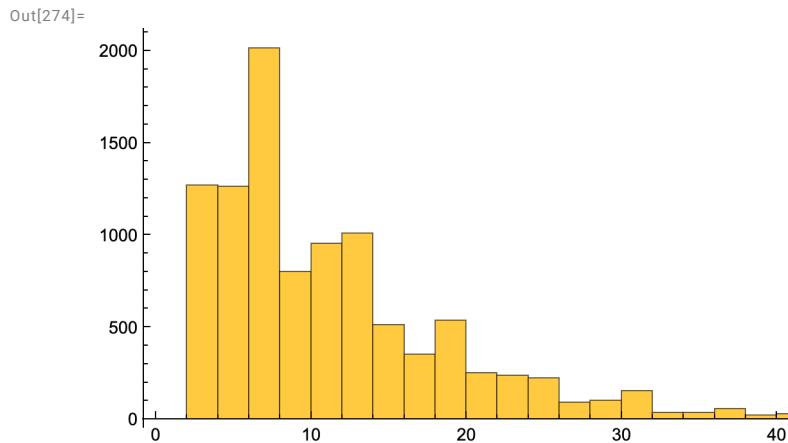


```
In[273]:= ListPlot3D[Table[Mod[i, j], {i, 100}, {j, 100}]]
```

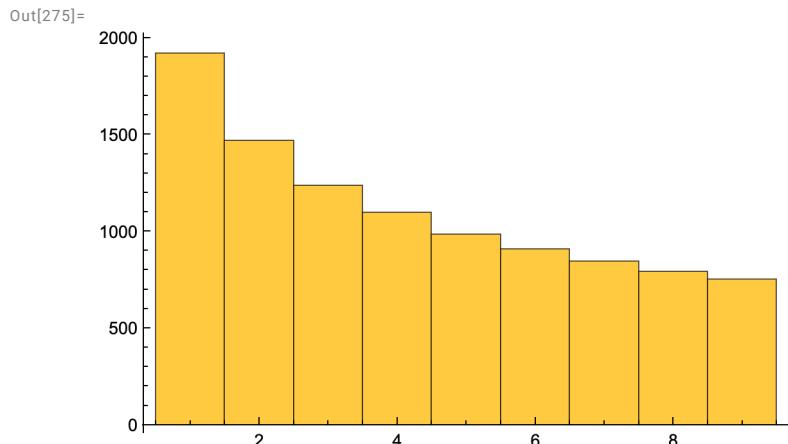
```
Out[273]=
```



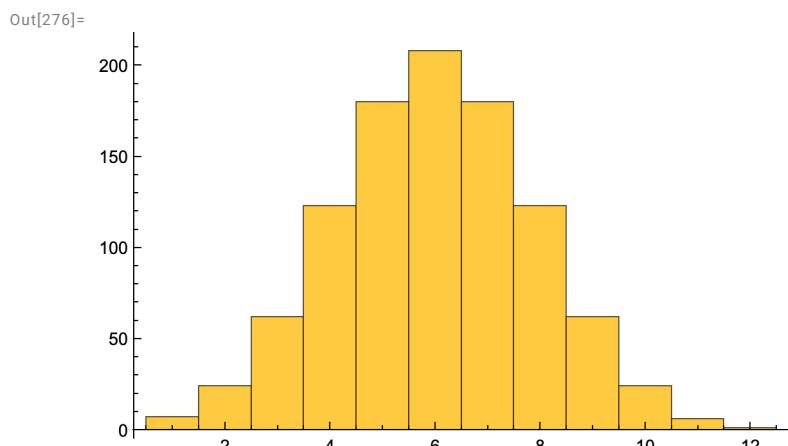
In[274]:= **Histogram[Table[Prime[n + 1] - Prime[n], {n, 10 000}]]**



In[275]:= **Histogram[Table[Part[IntegerDigits[n^2], 1], {n, 10 000}]]**



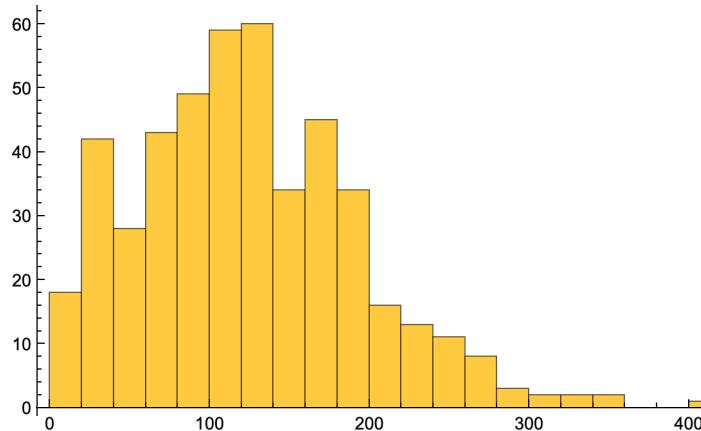
In[276]:= **Histogram[Table[StringLength[RomanNumeral[n]], {n, 1000}]]**



In[277]:=

```
Histogram[StringLength[TextSentences[WikipediaData["computers"]]]]
```

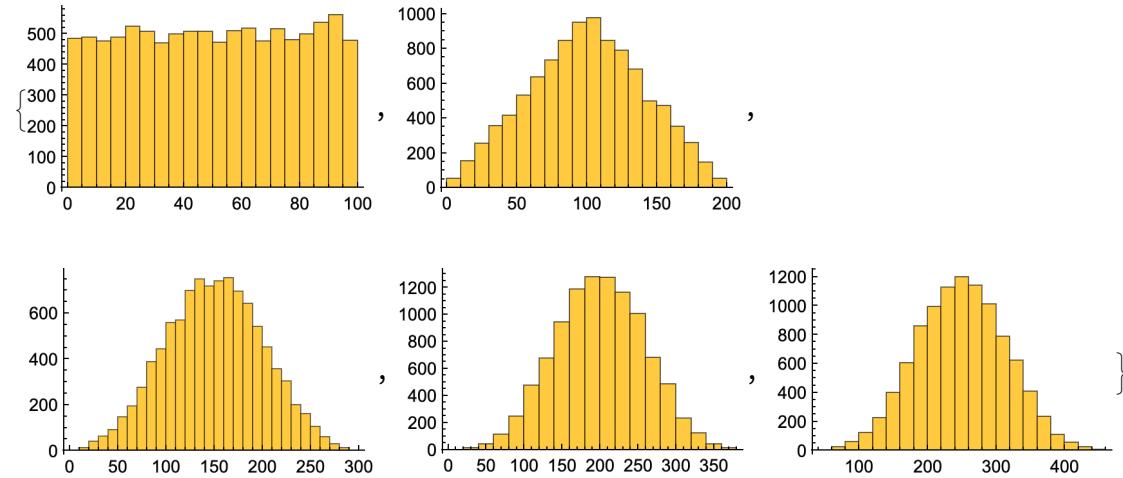
Out[277]=



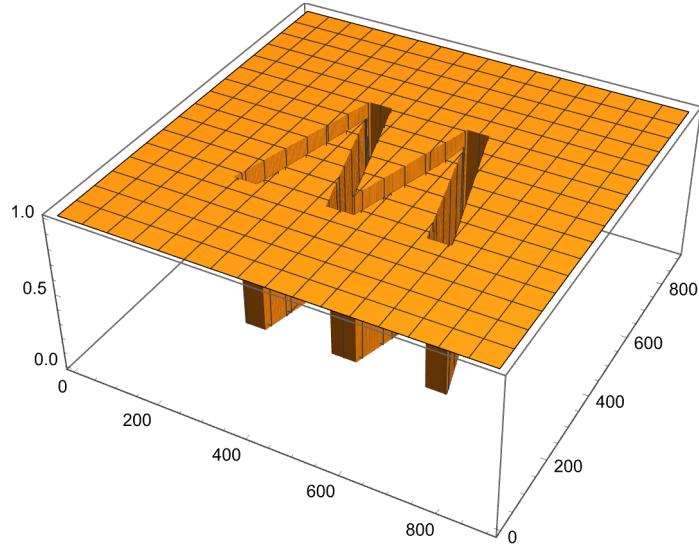
In[278]:=

```
Table[Histogram[Table[Total[RandomReal[100, n]], 10000]], {n, 1, 5}]
```

Out[278]=



```
In[279]:= ListPlot3D[ImageData[Binarize[Graphics[Style[Text["W"], 200]]]]]
Out[279]=
```



## Exercises from EIWL3 Section 25

```
In[280]:= f /@ Range[5]
Out[280]= {f[1], f[2], f[3], f[4], f[5]}

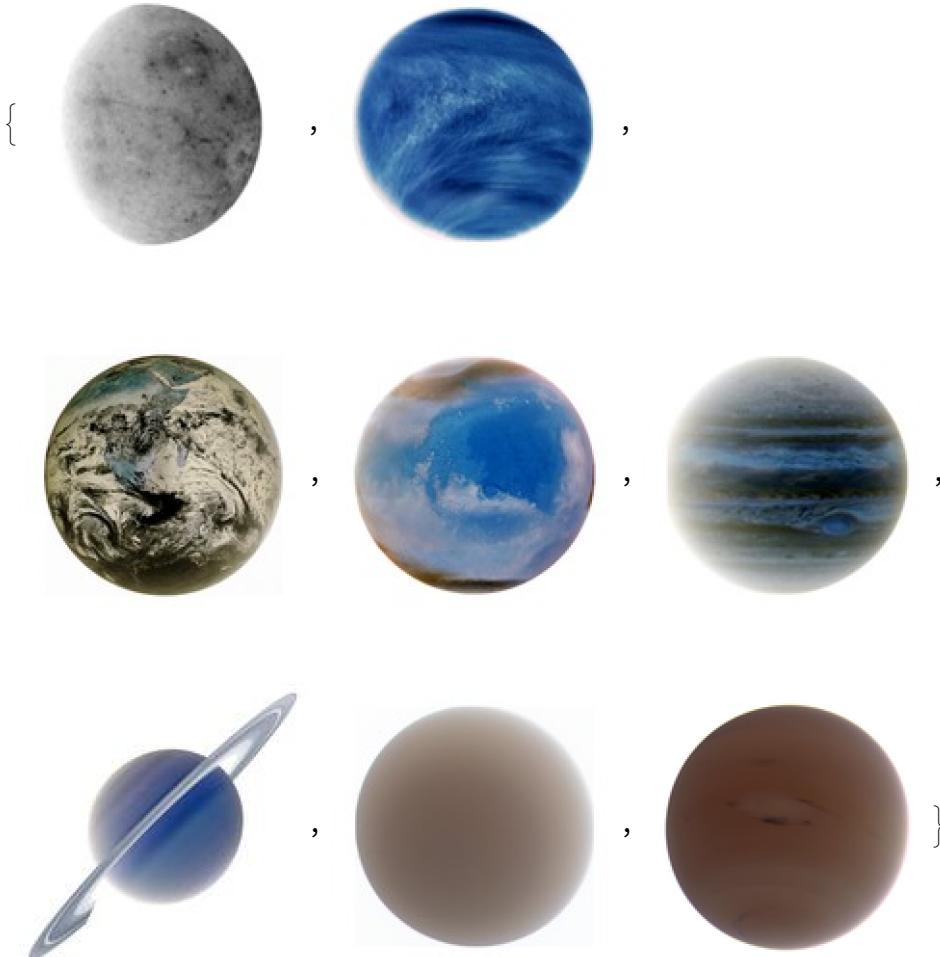
In[281]:= f /@ g /@ Range[10]
Out[281]= {f[g[1]], f[g[2]], f[g[3]], f[g[4]],
           f[g[5]], f[g[6]], f[g[7]], f[g[8]], f[g[9]], f[g[10]]}

In[282]:= x // d // c // b // a
Out[282]= a[b[c[d[x]]]]
```

```
In[283]:= Alphabet[] // Framed
Out[283]= {a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z}
```

```
In[284]:= EntityValue[planets PLANETS, "Image"] // ColorNegate
Out[284]=
```



In[285]:=

```
GeoGraphics /@ EntityList[ Group of 5 COUNTRIES ]
```

GeoServer: Unable to download one or more vector tiles.

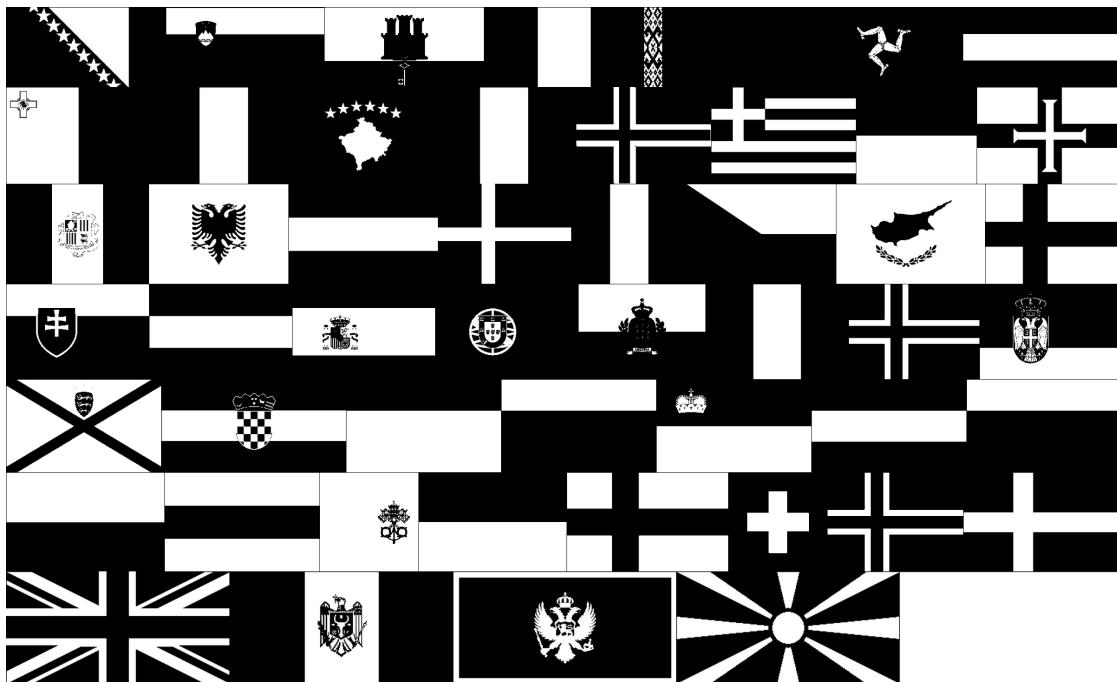
Out[285]=



In[286]:=

```
ImageCollage[Binarize /@ Europe COUNTRIES [ flag ]]
```

Out[286]=



In[287]:=

```
Column[Map[DominantColors, planets PLANETS [ image ]]]
```

Out[287]=

```
{█, █, █}
{█, █}
{█, █, █, █, █, █}
{█, █, █, █, █, █, █, █}
{█, █, █, █, █, █, █, █, █}
{█, █, █, █, █, █, █, █, █}
{█, █, █, █, █, █, █, █, █}
{█, █, █, █, █, █, █, █, █}
```

In[288]:=

```
Total[LetterNumber["wolfram"]]
```

Out[288]=

88