

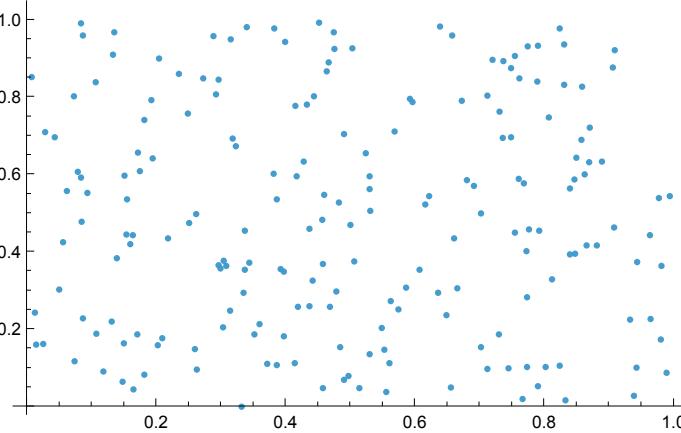
Harper – EIWL Sections 23-25

Section 23

```
In[289]:= N[Sqrt[2], 500]
Out[289]= 1.4142135623730950488016887242096980785696718753769480731766797379907324784621070...
38850387534327641572735013846230912297024924836055850737212644121497099935831413...
22266592750559275579995050115278206057147010955997160597027453459686201472851741...
86408891986095523292304843087143214508397626036279952514079896872533965463318088...
29640620615258352395054745750287759961729835575220337531857011354374603408498847...
16038689997069900481503054402779031645424782306849293691862158057846311159666871...
30130156185689872372

In[290]:= RandomReal[1, 10]
Out[290]= {0.627184, 0.459564, 0.0824667, 0.222849,
0.815998, 0.921473, 0.8846, 0.951628, 0.575421, 0.458576}

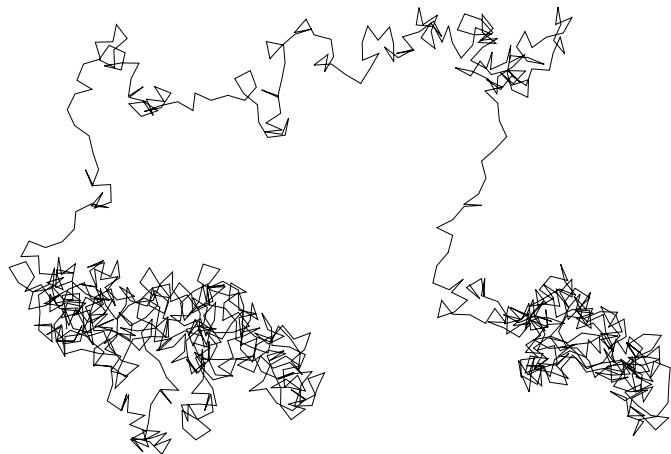
In[291]:= ListPlot[Table[{RandomReal[1], RandomReal[1]}, 200]]
Out[291]=
```



In[293]:=

```
Graphics[Line[AnglePath[Table[{1, RandomReal[2 Pi]}, 1000]]]]
```

Out[293]=



In[294]:=

```
Table[Mod[n^2, 10], {n, 0, 30}]
```

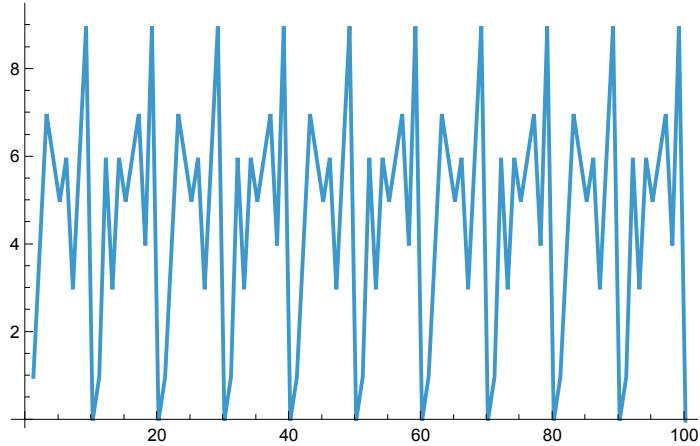
Out[294]=

```
{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[295]:=

```
ListLinePlot[Table[Mod[n^n, 10], {n, 1, 100}]]
```

Out[295]=



In[296]:=

```
Round[N[Table[Pi^n, {n, 10}]]]
```

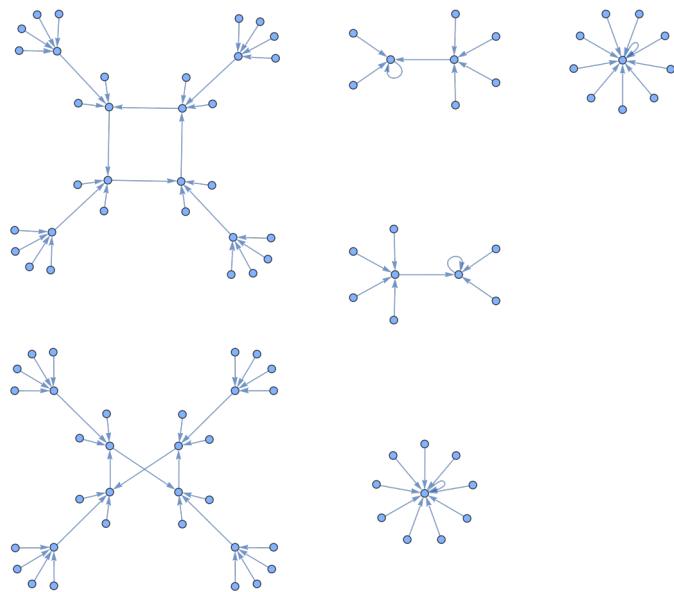
Out[296]=

```
{3, 10, 31, 97, 306, 961, 3020, 9489, 29809, 93648}
```

In[297]:=

```
Graph[Table[n → Mod[n^2, 100], {n, 0, 99}]]
```

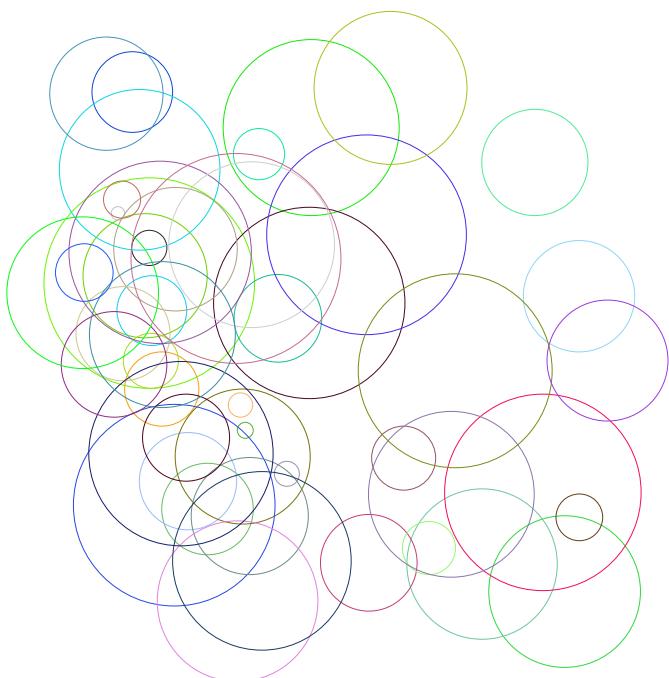
Out[297]=

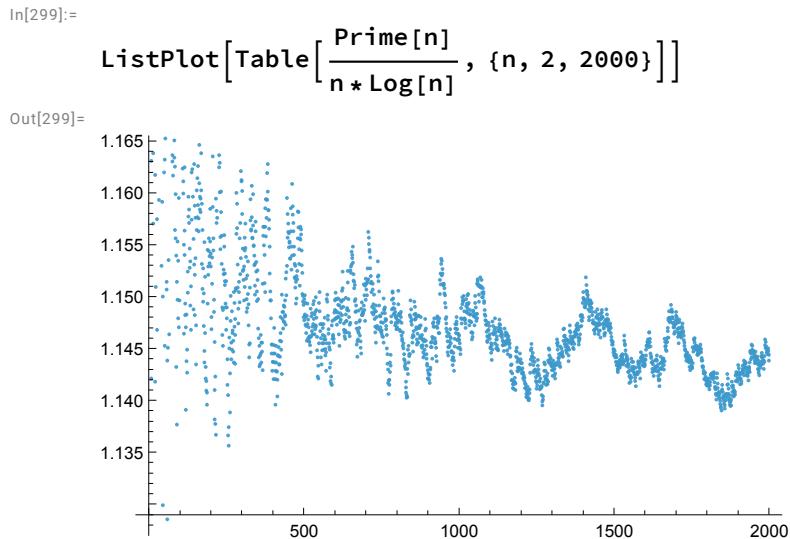


In[298]:=

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

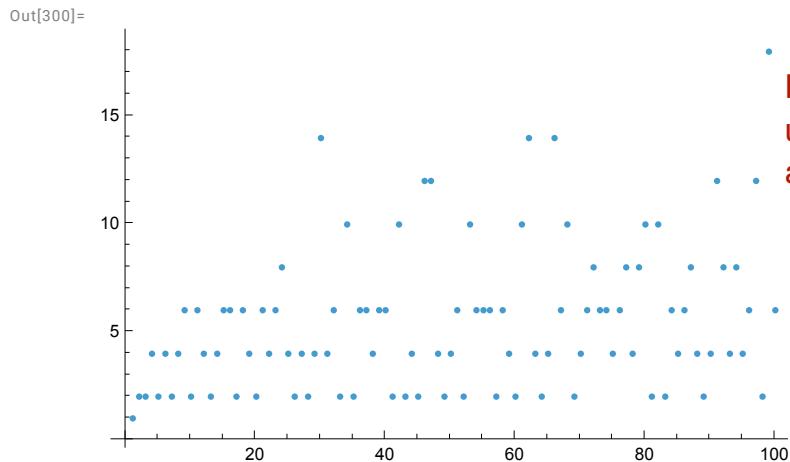
Out[298]=





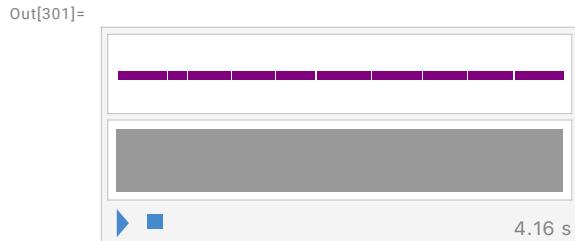
In[300]:=

```
ListPlot[Table[Prime[n + 1] - Prime[n], {n, 100}]]
```



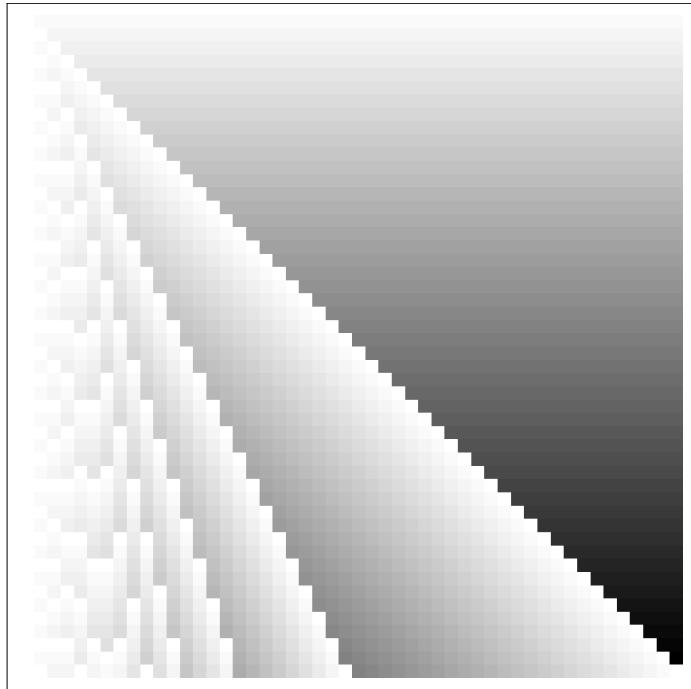
In[301]:=

```
Sound[Table[SoundNote[0, RandomReal[0.5]], 20]]
```



```
In[302]:= ArrayPlot[Table[Mod[i, j], {i, 50}, {j, 50}]]
```

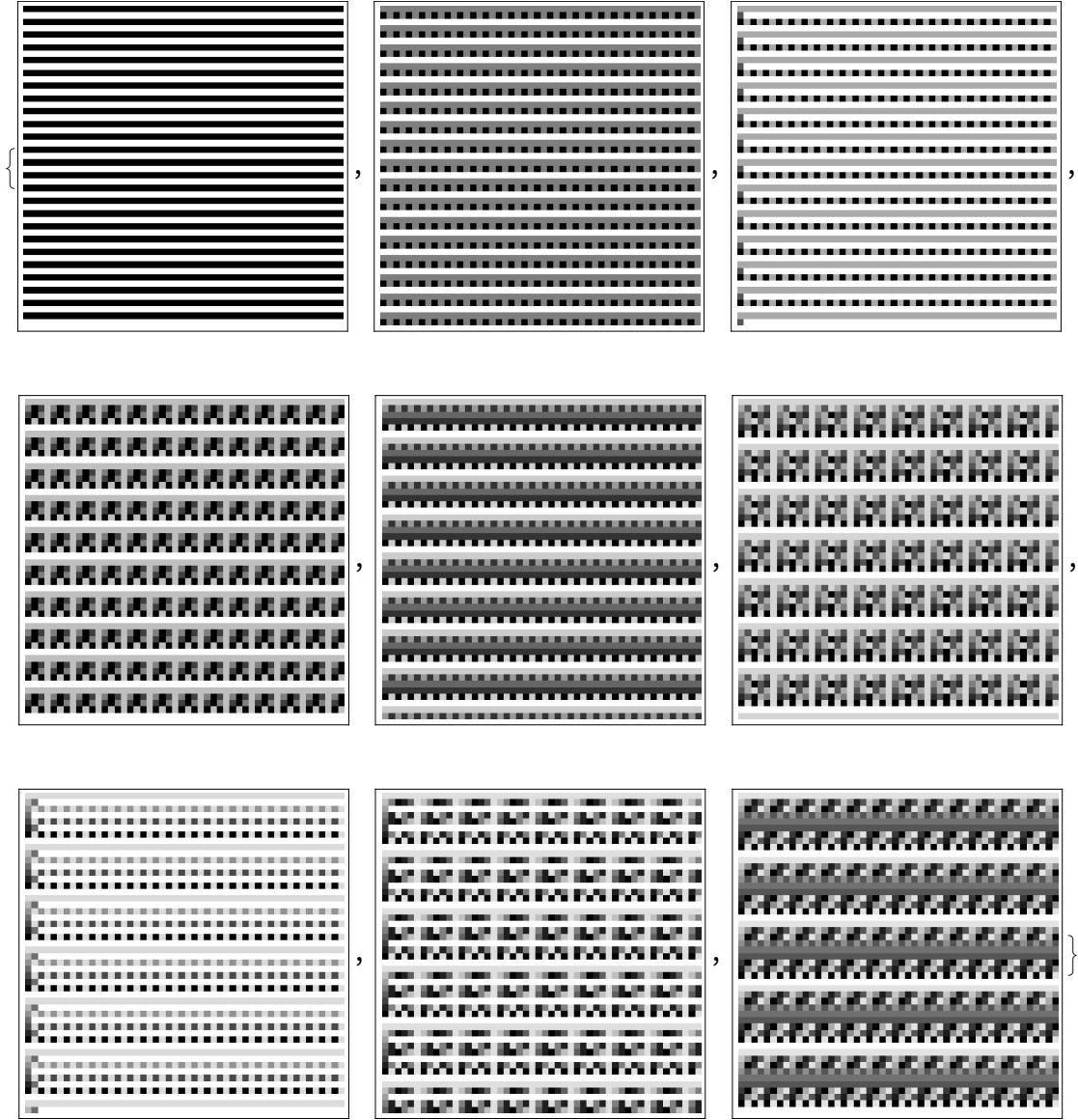
```
Out[302]=
```



In[303]:=

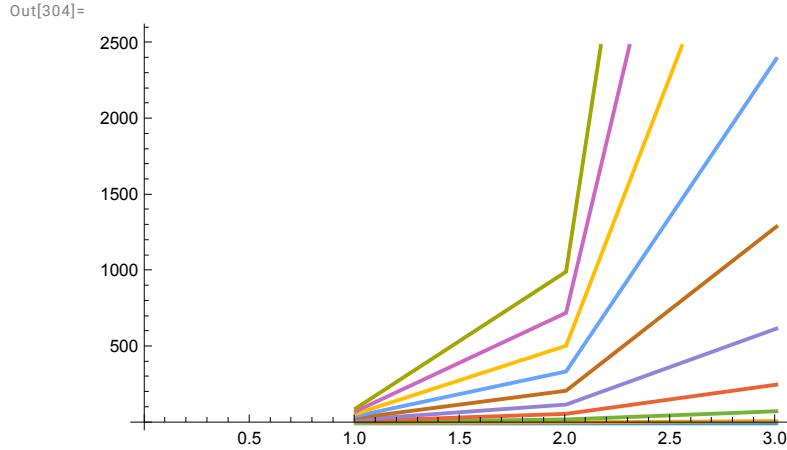
```
Table[ArrayPlot[Table[Mod[x^y, n], {x, 50}, {y, 50}]], {n, 2, 10}]
```

Out[303]=



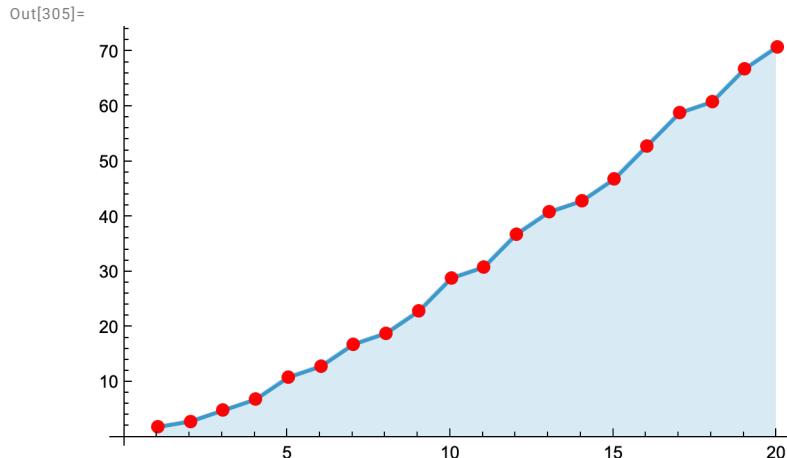
Section 24

```
In[304]:= ListLinePlot[Table[{n^2, n^3, n^4}, {n, 10}]]
```



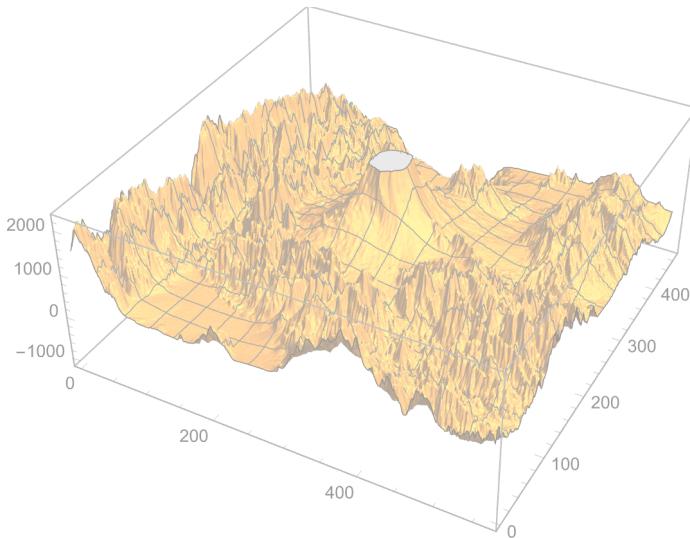
Oops! Definitely not what you were trying to create. See if you can get what I created in my solution.

```
In[305]:= ListLinePlot[Table[Prime[n], {n, 20}], Filling -> Axis, Mesh -> All, MeshStyle -> Red]
```



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

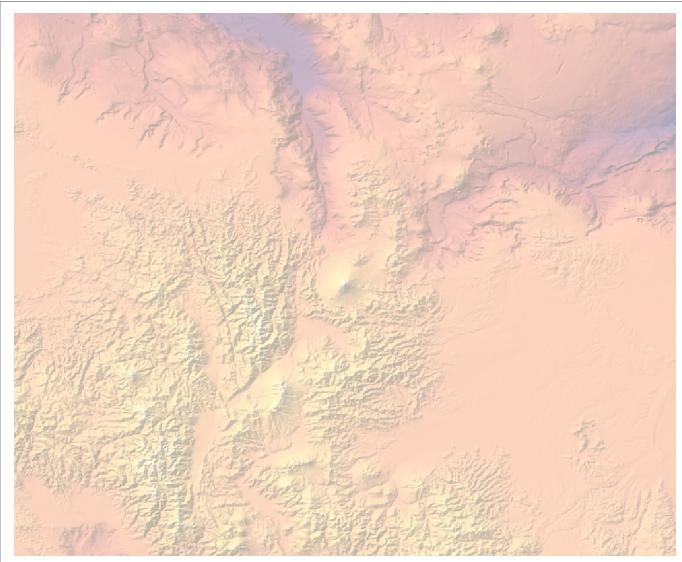
Out[306]=



Mt. Fuji isn't beheaded if you do PlotRange->All.

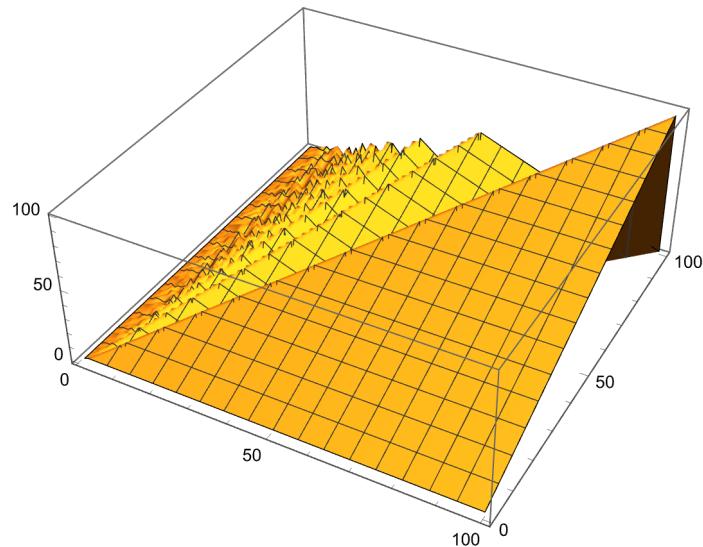
```
ReliefPlot[GeoElevationData[GeoDisk[Mount Fuji MOUNTAIN ..., ..., 100 mi ...]]]
```

Out[307]=



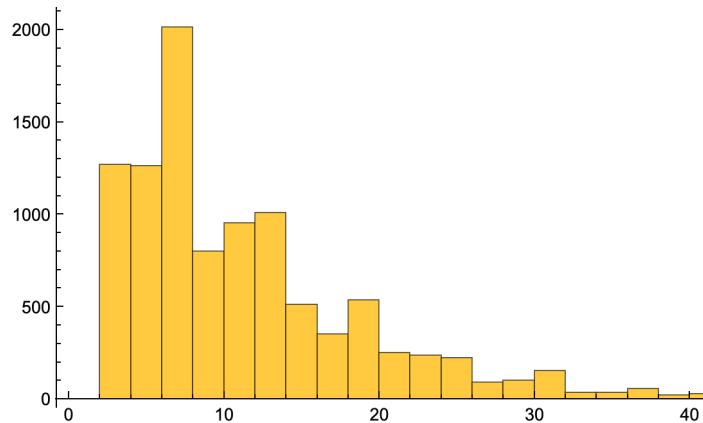
```
In[308]:= ListPlot3D[Table[Mod[i, j], {i, 100}, {j, 100}]]
```

```
Out[308]=
```

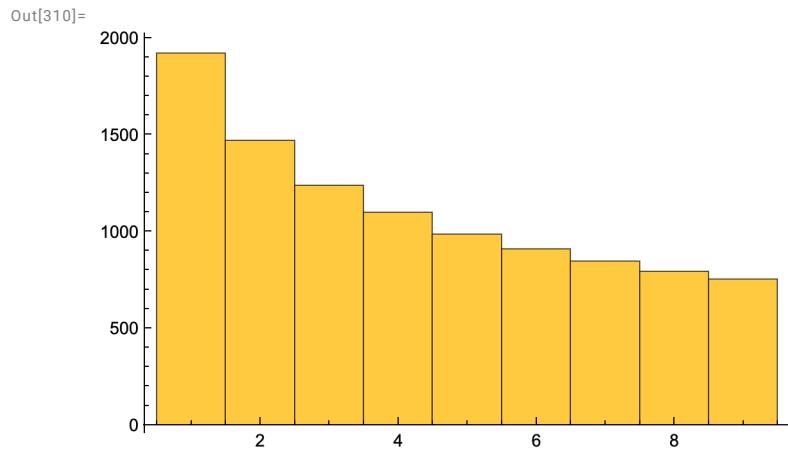


```
In[309]:= Histogram[Table[Prime[n + 1] - Prime[n], {n, 10 000}]]
```

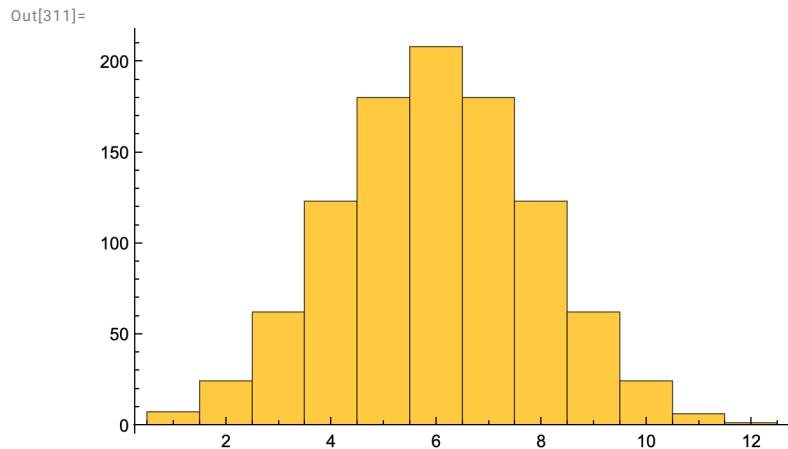
```
Out[309]=
```



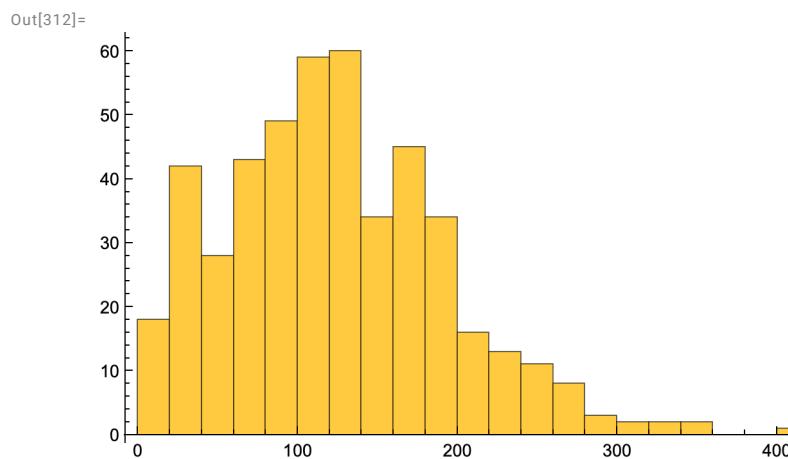
In[310]:= **Histogram[Table[IntegerDigits[n^2][1], {n, 10000}]]**



In[311]:= **Histogram[Table[Length[Characters[RomanNumeral[n]]], {n, 1000}]]**



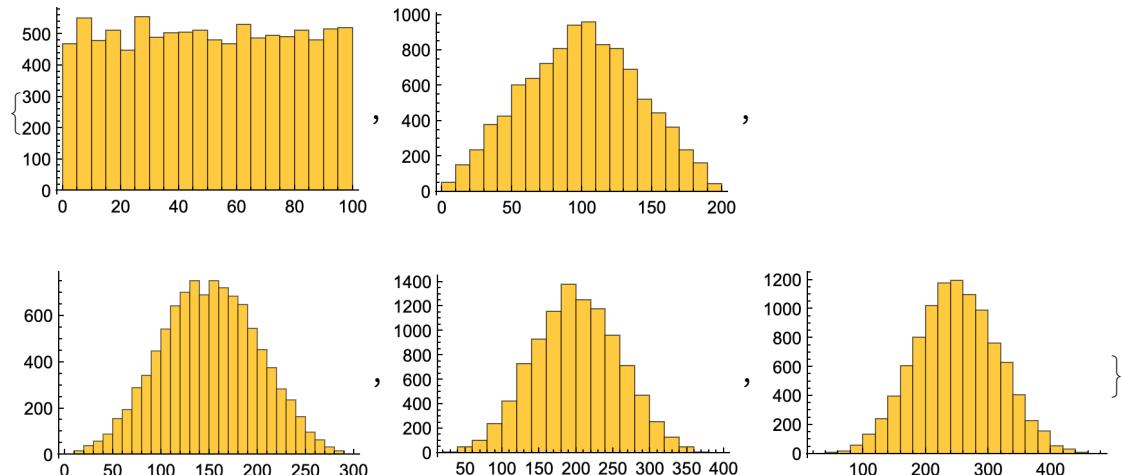
In[312]:= **Histogram[StringLength[TextSentences[WikipediaData["Computers"]]]]**



In[313]:=

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

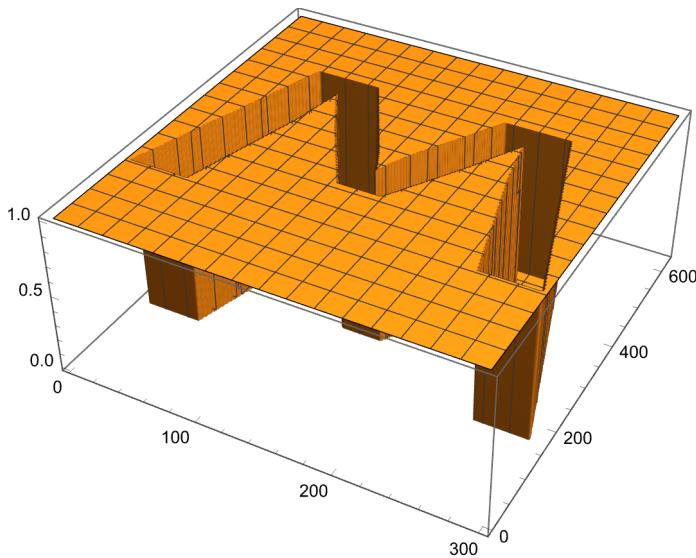
Out[313]=



In[314]:=

```
ListPlot3D[ImageData[Binarize[Rasterize[Style["W", 200]]]]]
```

Out[314]=



Section 25

In[315]:=

```
f /@ Range[5]
```

Out[315]=

```
{f[1], f[2], f[3], f[4], f[5]}
```

In[316]:=

```
f /@ g /@ Range[10]
```

Out[316]=

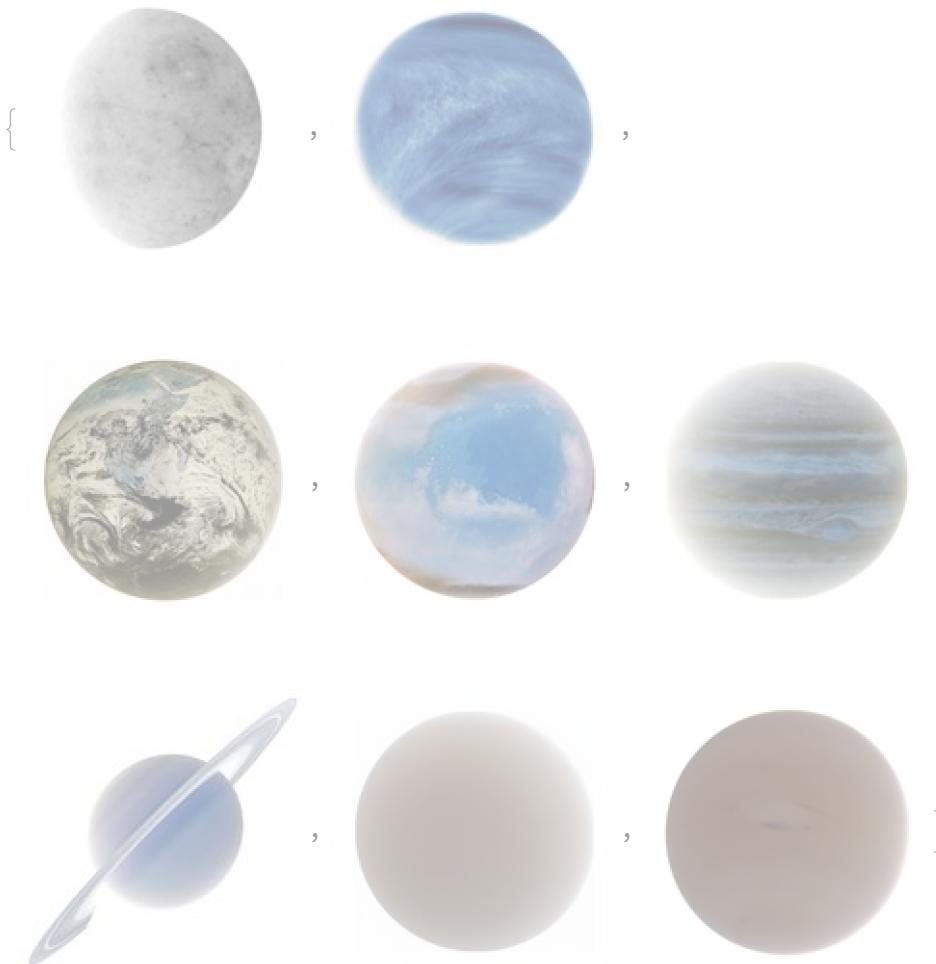
```
{f[g[1]], f[g[2]], f[g[3]], f[g[4]],
f[g[5]], f[g[6]], f[g[7]], f[g[8]], f[g[9]], f[g[10]]}
```

```
In[317]:= x // d // c // b // a
Out[317]= a[b[c[d[x]]]]
```

```
In[318]:= Framed /@ FromLetterNumber[Range[26]]
Out[318]= {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}
```

```
ColorNegate /@ EntityValue[planets PLANETS ... ✓, "Image"]
```

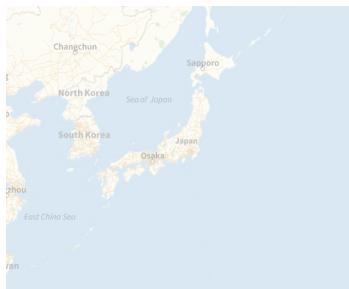
Out[319]=



GeoGraphics /@ EntityList [Group of 5 COUNTRIES]

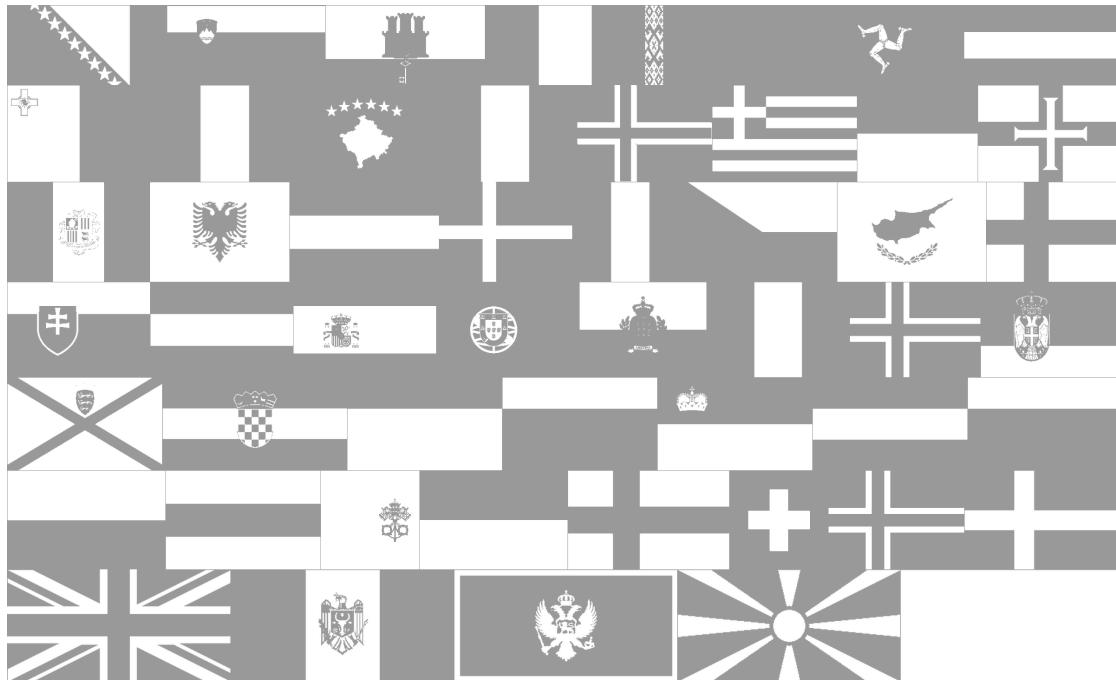
GeoServer: Unable to download one or more vector tiles.

Out[320]=



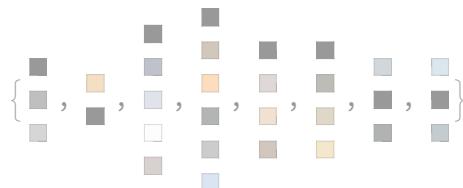
ImageCollage[`Binarize /@` `[flag]`

Out[321]=



`Column /@ DominantColors /@ EntityValue[, "Image"]`

Out[322]=



In[323]:=

`Total[LetterNumber /@ Characters["wolfram"]]`

Out[323]=

88