

Walker — Problem Set 15

Section 37

In[235]:=

```
If[EvenQ[#], Style[#, Background → Yellow], Style[#, Background → LightGray]] & /@  
Range[100]
```

Out[235]=

```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22,  
23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,  
43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62,  
63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81,  
82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100}
```

In[236]:=

```
If[PrimeQ[#], Framed[#, #] & /@ Range[100]
```

Out[236]=

```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22,  
23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,  
43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61,  
62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80,  
81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100}
```

In[237]:=

```
If[PrimeQ[#], Labeled[Framed[#], Style[Mod[#, 4], LightGray]], #] & /@ Range[100]
```

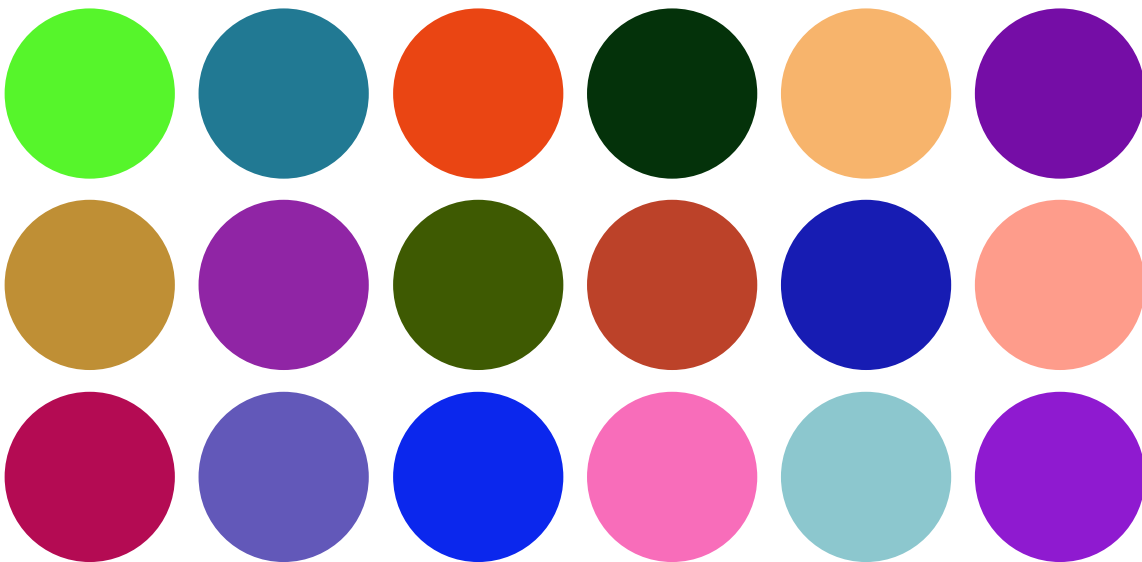
Out[237]=

```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17,
  18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33,
  34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50,
  51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67,
  68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83,
  84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100}
```

In[238]:=

```
GraphicsGrid[Table[Graphics[Style[Disk[], RandomColor[]]], 3, 6]]
```

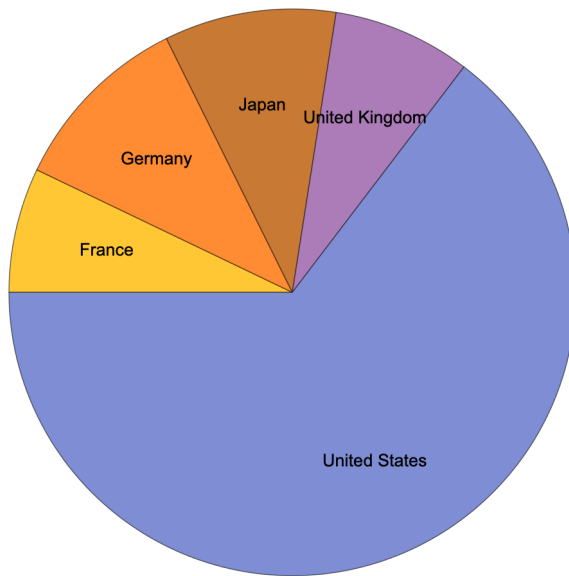
Out[238]=




In[239]:=

```
PieChart[Labeled[EntityValue[#, "GDP"], EntityValue[#, "Name"]] & /@  
EntityList[Group of 5 COUNTRIES], {}]
```

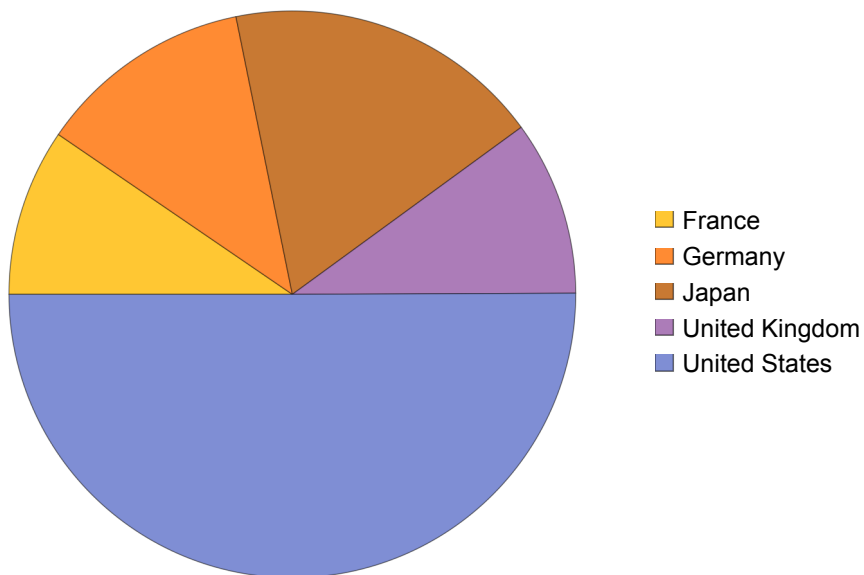
Out[239]=



In[240]:=

```
PieChart[Legended[EntityValue[#, "Population"], EntityValue[#, "Name"]] & /@  
EntityList[
```

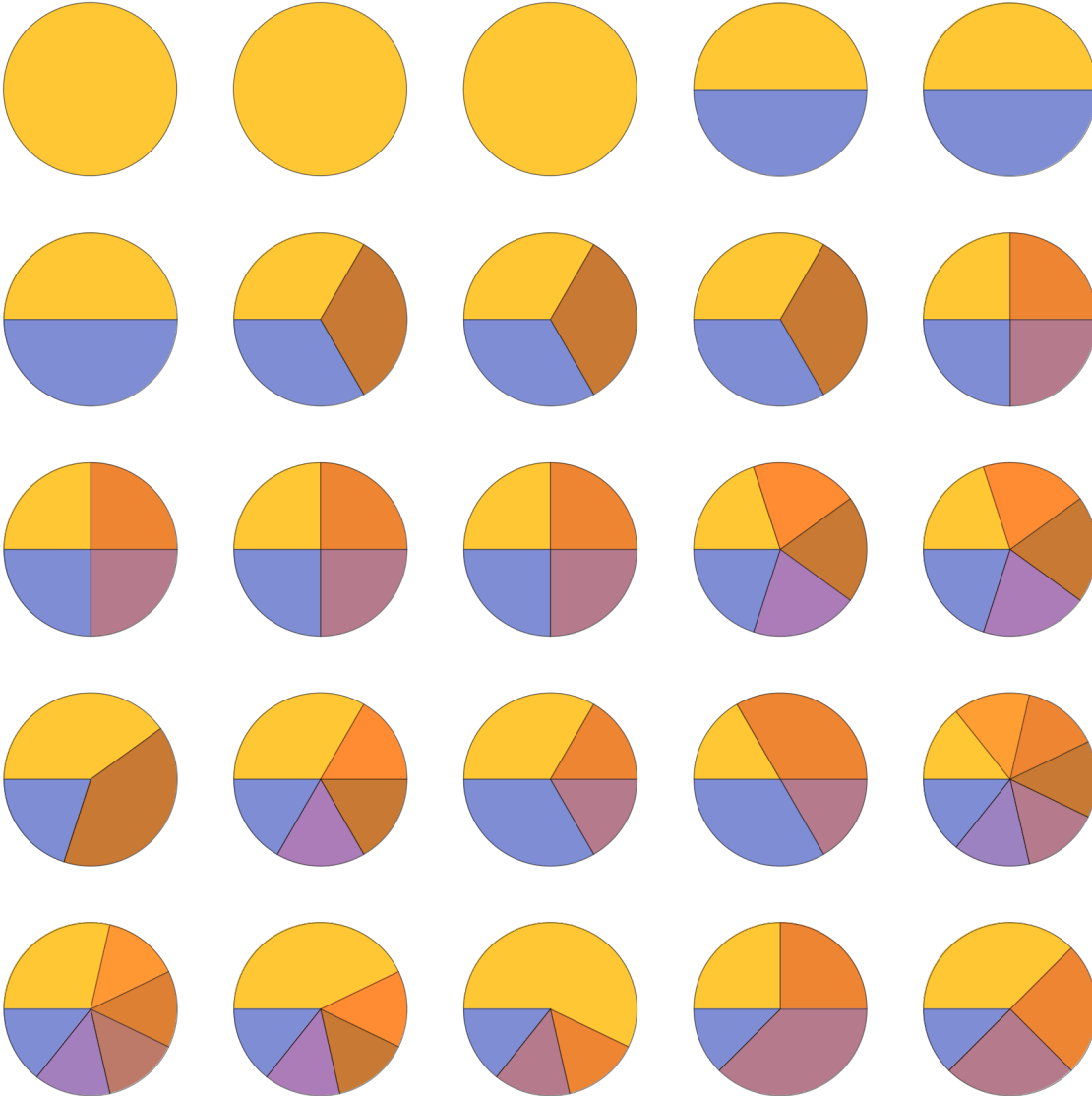
Out[240]=



In[241]:=

```
GraphicsGrid[
  Partition[PieChart[Length /@ Gather[IntegerDigits[2 ^ #]]] & /@ Range[25], 5]]
```

Out[241]=



In[242]:=

```
GraphicsRow[WordCloud[WikipediaData[#]] & /@ EntityList[
  Group of 5 COUNTRIES ...]]
```

Out[242]=



Section 38

In[243]:=

```
Module[{x = Range[10]}, x^2 + x]
```

Out[243]=

```
{2, 6, 12, 20, 30, 42, 56, 72, 90, 110}
```

In[244]:=

```
Module[{x = RandomInteger[100, 10]}, Column[{x, Sort[x], Max[x], Total[x]}]]
```

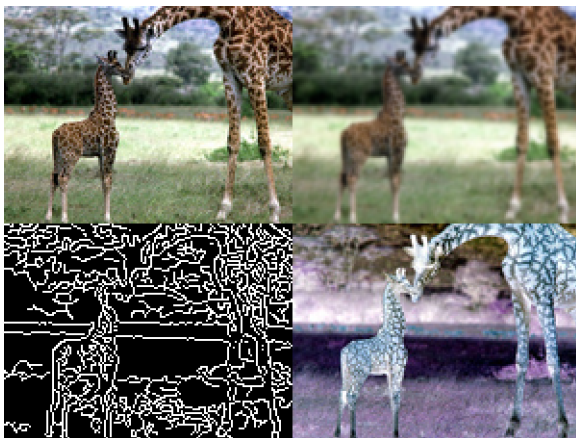
Out[244]=

```
{30, 95, 99, 79, 84, 34, 45, 2, 7, 56}
{2, 7, 30, 34, 45, 56, 79, 84, 95, 99}
99
531
```

In[245]:=

```
Module[{x = giraffe SPECIES SPECIFICATION ... ✓ ["Image"]},
  ImageCollage[{x, Blur[x], EdgeDetect[x], ColorNegate[x]}]]
```

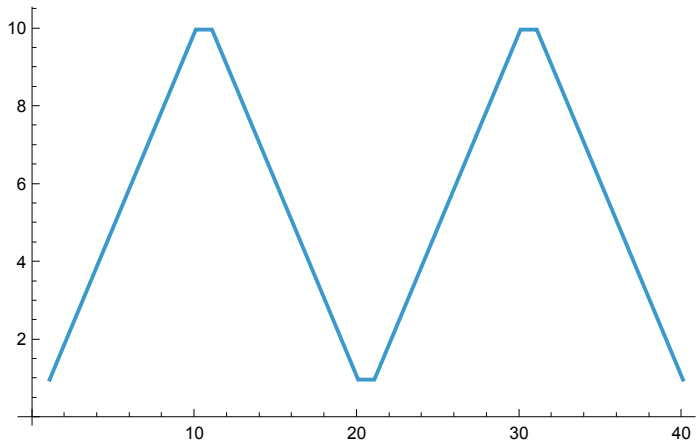
Out[245]=



In[246]:=

```
Module[{r = Range[10]}, ListLinePlot[Join[r, Reverse[r], r, Reverse[r]]]]
```

Out[246]=



In[247]:=

```
Module[{x = Range[10]}, {x + 1, x - 1, Reverse[x]}]
```

Out[247]=

```
{ {2, 3, 4, 5, 6, 7, 8, 9, 10, 11},  
  {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}, {10, 9, 8, 7, 6, 5, 4, 3, 2, 1} }
```

In[248]:=

```
NestList[Mod[17 # + 2, 11] &, 10, 20]
```

Out[248]=

```
{10, 7, 0, 2, 3, 9, 1, 8, 6, 5, 10, 7, 0, 2, 3, 9, 1, 8, 6, 5, 10}
```

In[249]:=

```
Module[{c, v}, v = {"a", "e", "i", "o", "u"};  
c = If[MemberQ[v, #], Nothing, #] & /@ Alphabet[];  
Table[StringJoin[{RandomChoice[c], RandomChoice[v],  
  RandomChoice[c], RandomChoice[v], RandomChoice[c]}], 10]]
```

Out[249]=

```
{koxam, qohot, hozoy, holav, givur, newad, kuwaq, yakud, bamom, xuvut}
```