See comments on p. 4 and 8.
Otherwise very nice. 8 / 8

Hexi—PS15—2025 - 04 - 01

Exercises from EIWL3 Section 37

In[200]:=
```
Table[Style[n, Background → If[EvenQ[n], Yellow, LightGray]], {n, 100}]
```

Out[200]=
```
{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[201]:=
```
Table[If[PrimeQ[n], Framed[n], n], {n, 100}]
```

Out[201]=
```
{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}
```

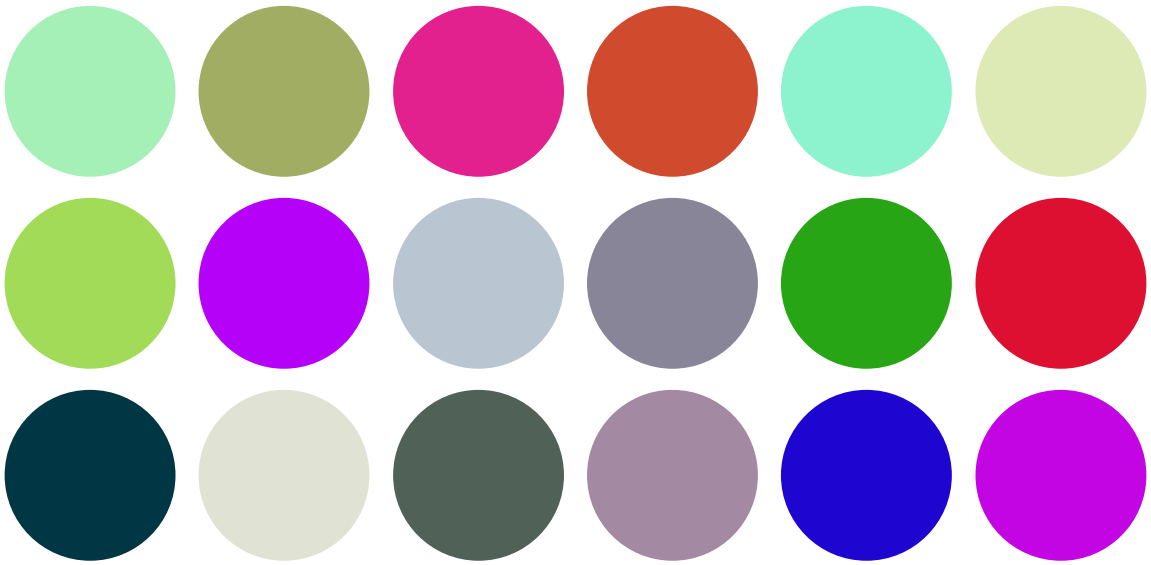
In[202]:=
```
Table[If[PrimeQ[n], Labeled[Framed[n], Style[Mod[n, 4], LightGray]], n], {n, 100}]
```

Out[202]=
```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17,
      2  3     1     3        3     1        1
 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33,
      3           3                    1     3
 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50,
             1           1     3           3
 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67,
         1                       3     1                       3
 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83,
             3     1                       3                 3
 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100}
          1                             1
```

In[203]:=

```
GraphicsGrid[Table[Graphics[{RandomColor[], Disk[]}], 3, 6]]
```

Out[203]=



In[204]:=

Out[204]=

In[205]:=

```
PieChart[]
```

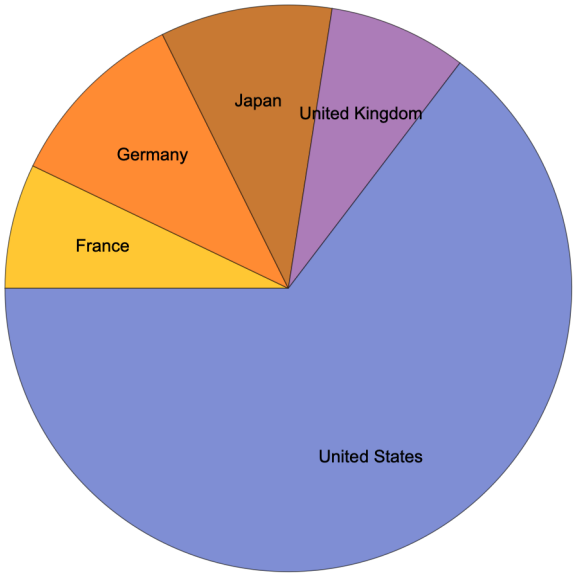
PieChart: PieChart called with 0 arguments; 1 argument is expected.

Out[205]=

```
PieChart[]
```

In[206]:=
```
PieChart[ Group of 5 COUNTRIES ["GDP"], ChartLabels → Group of 5 COUNTRIES ["Name"]]
```

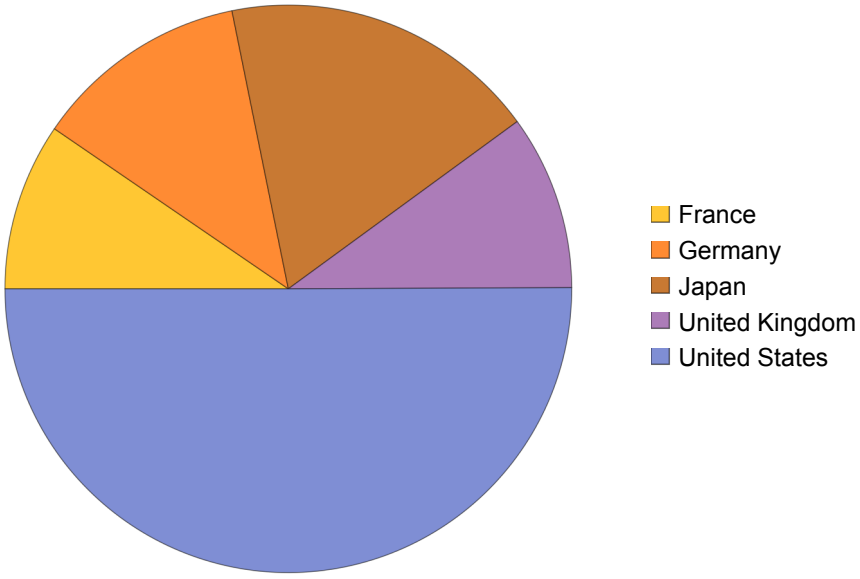
Out[206]=



In this problem and the next one, you used the EntityGroup twice. There is a way to get the labels and legends without doing that.

In[207]:=
```
PieChart[ Group of 5 COUNTRIES ["Population"], ChartLegends → Group of 5 COUNTRIES ["Name"]]
```

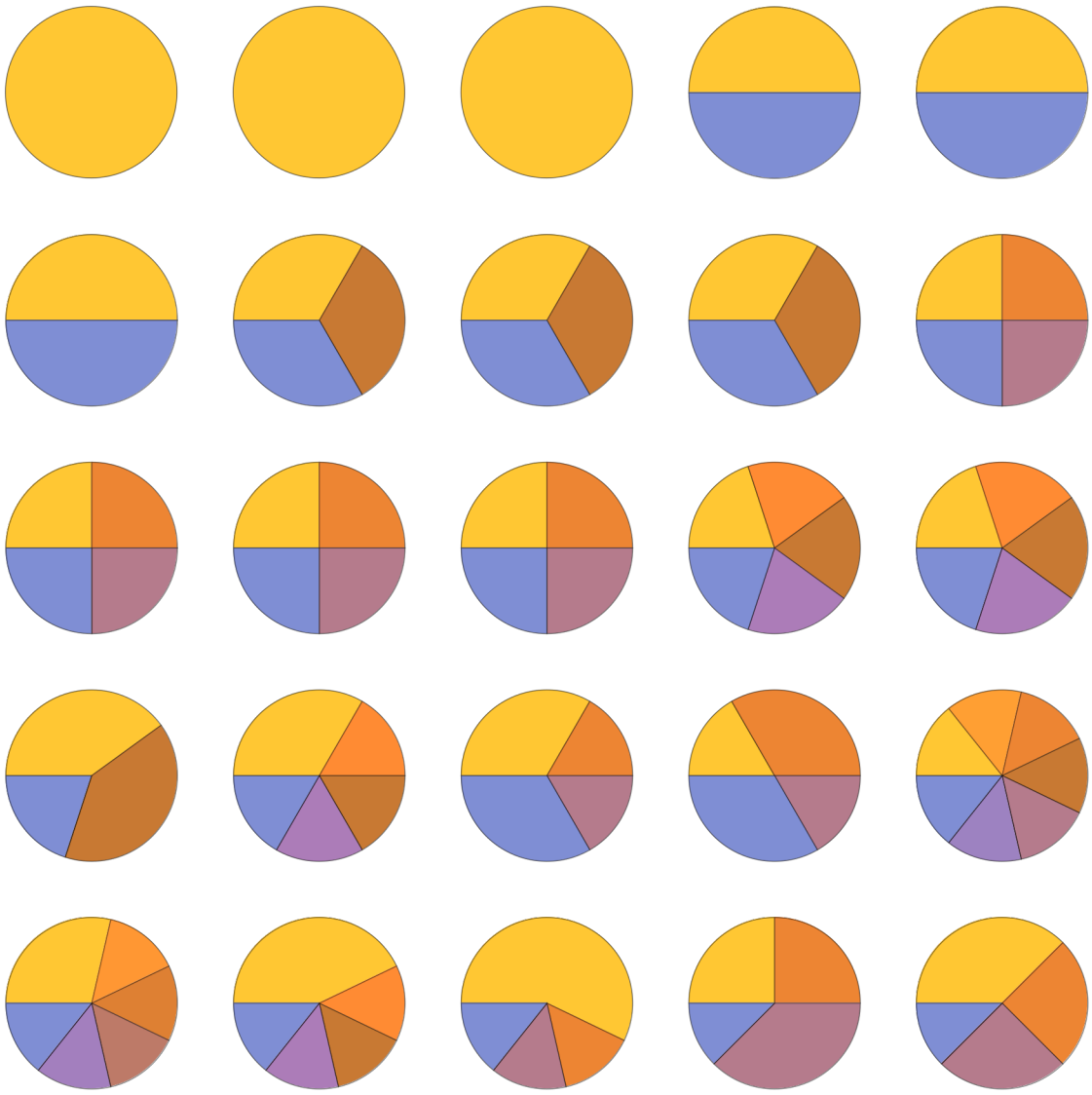
Out[207]=



In[208]:=

```
GraphicsGrid[
 Partition[Table[PieChart[Values[Counts[IntegerDigits[2^n]]]], {n, 1, 25}], 5]]
```

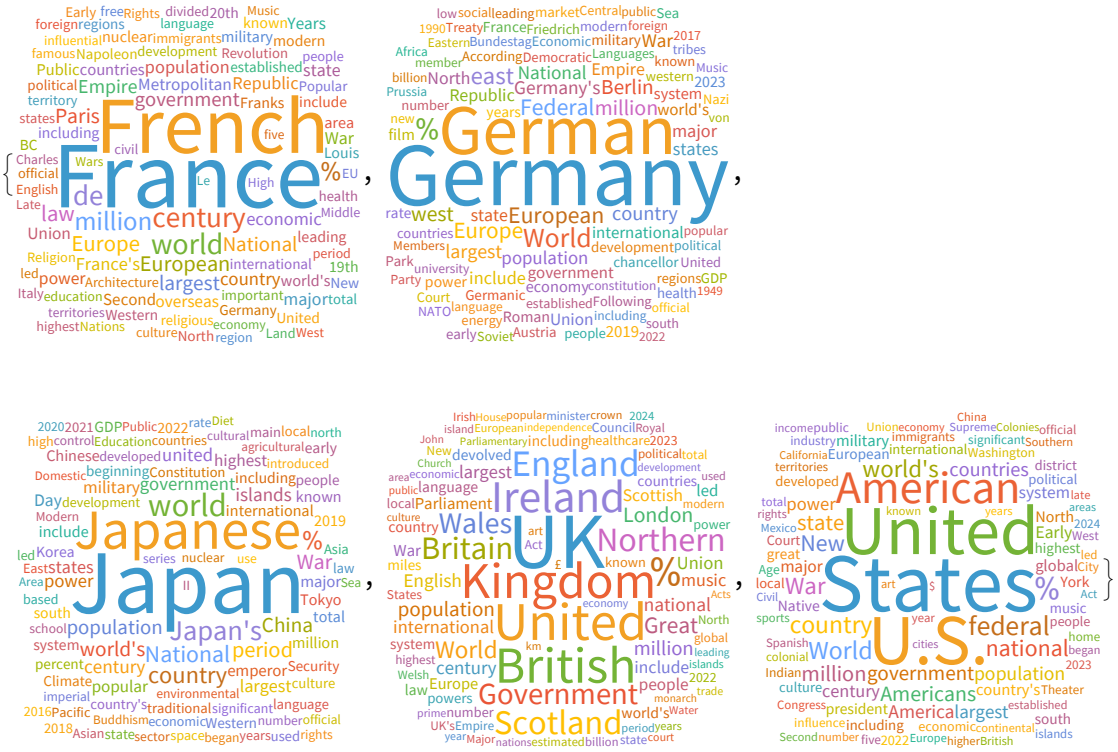
Out[208]=



In[209]:=

```
WordCloud[WikipediaData[#]] & /@ Group of 5 COUNTRIES ["Name"]
```

Out[209]=



Exercises from EIWL3 Section 38

In[210]:=

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

Out[210]=

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

In[211]:=

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

Out[211]=

```
{0, 67, 79, 36, 34, 75, 48, 83, 10, 30}
{0, 10, 30, 34, 36, 48, 67, 75, 79, 83}
83
462
```

In[212]:=

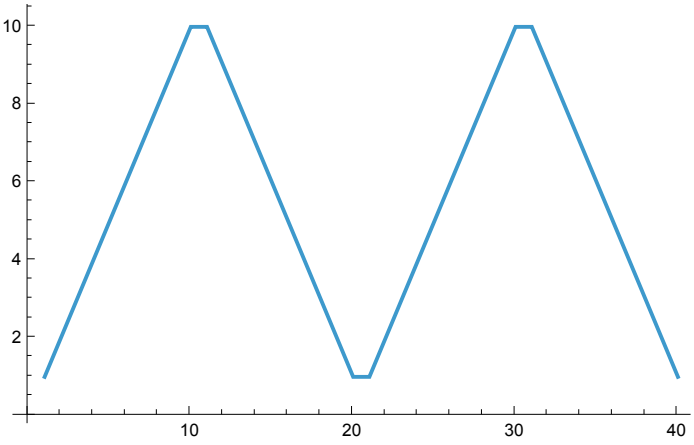
```
Module[{x = EntityValue[ giraffe SPECIES SPECIFICATION , "Image"]},
 {Blur[x], EdgeDetect[x], ColorNegate[x]}]
```

Out[212]=

In[213]:=

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

Out[213]=



In[214]:=

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

Out[214]=

```
{{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[215]:=

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

Out[215]=

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

OK, right answer, but this is clunky! See my solution for something a little better. I still had to list the vowels and I listed them twice. Mine isn't great either.

In[216]:=

```
vowels = {"a", "e", "i", "o", "u"};
lv = LetterNumber[#] & /@ {"a", "e", "i", "o", "u"};
consonants = Delete[
   Delete[Delete[Delete[Delete[Alphabet[], lv[[1]]], lv[[2]]], lv[[3]]], lv[[4]]], lv[[5]]];
Module[{c = consonants, v = vowels},
 Table[StringJoin[RandomSample[c, 1], RandomSample[v, 1],
   RandomSample[c, 1], RandomSample[v, 1], RandomSample[c, 1]], 10]]
```

Out[219]=

```
{uewoc, qaoip, vaein, gisuh, nuuep, pinih, soiot, uacot, iazem, loeau}
```