Harper — 2025-01-17 — PS 1

In[326]:=
```
1 + 2 + 3
```
Out[326]=
```
6
```

In[327]:=
```
1 + 2 + 3 + 4 + 5
```
Out[327]=
```
15
```

In[328]:=
```
1 * 2 * 3 * 4 * 5
```
Out[328]=
```
120
```

In[329]:=
```
5 ^ 2
```
Out[329]=
```
25
```

In[330]:=
```
3 ^ 4
```
Out[330]=
```
81
```

In[331]:=
```
10 ^ 12
```
Out[331]=
```
1 000 000 000 000
```

In[332]:=
```
3 ^ (7 * 8)
```
Out[332]=
```
523 347 633 027 360 537 213 511 521
```

In[333]:=
```
(4 - 2) * (3 + 4)
```
Out[333]=
```
14
```

In[334]:=
```
29 000 * 73
```
Out[334]=
```
2 117 000
```

In[335]:=
```
-3 + -2 + -1 + 0 + 1 + 2 + 3
```
Out[335]=
```
0
```

This is perfect. One (positive!) comment on p. 3.

Oh, also, I didn't mean
for people do all the bonus exercises, but good on you!

10/10

In[336]:=
```
24 / 3
```
Out[336]=
```
8
```

In[337]:=
```
5 ^ 100
```
Out[337]=
```
7 888 609 052 210 118 054 117 285 652 827 862 296 732 064 351 090 230 047 702 789 306 640 625
```

In[338]:=
```
100 - 5 ^ 2
```
Out[338]=
```
75
```

In[339]:=
```
6 * 5 ^ 2 + 7
```
Out[339]=
```
157
```

In[340]:=
```
3 ^ 2 - 2 ^ 3
```
Out[340]=
```
1
```

In[341]:=
```
2 ^ 3 * 3 ^ 2
```
Out[341]=
```
72
```

In[342]:=
```
2 (8 + -11)
```
Out[342]=
```
-6
```

2 | Introducing Functions

In[343]:=
```
Plus[7, 6, 5]
```
Out[343]=
```
18
```

In[344]:=
```
Times[2, Plus[3, 4]]
```
Out[344]=
```
14
```

In[345]:=
```
14
```
Out[345]=
```
14
```

In[346]:=
```
Max[6 * 8, 5 * 9]
```
Out[346]=
```
48
```

In[347]:=
```
RandomInteger[100]
```
Out[347]=
```
29
```

In[348]:=
```
RandomInteger[{10, 20}]
```
Out[348]=
```
20
```

In[349]:=
```
Times[5, 4, 3, 2]
```
Out[349]=
```
120
```

In[350]:=
```
Subtract[2, 3]
```
Out[350]=
```
-1
```

In[351]:=
```
Times[Plus[7, 8], Plus[9, 2]]
```
Out[351]=
```
165
```

In[352]:=
```
Divide[Subtract[26, 89], 9]
```
Out[352]=
```
-7
```

In[353]:=
```
Subtract[100, Power[5, 2]]
```
Out[353]=
```
75
```

In[354]:=
```
Max[3^5, 5^3]
```
Out[354]=
```
243
```

In[355]:=
```
3 * Max[4^3, 3^4]
```
Out[355]=
```
243
```

Cool. I didn't know that worked, so I had to do it as

Plus[10,RandomInteger[10]]

which is not as readable as what you did.

In[356]:=
```
RandomInteger[1000] + RandomInteger[1000]
```
Out[356]=
```
952
```

3 | First Look at Lists

In[357]:=
```
Range[4]
```
Out[357]=
```
{1, 2, 3, 4}
```

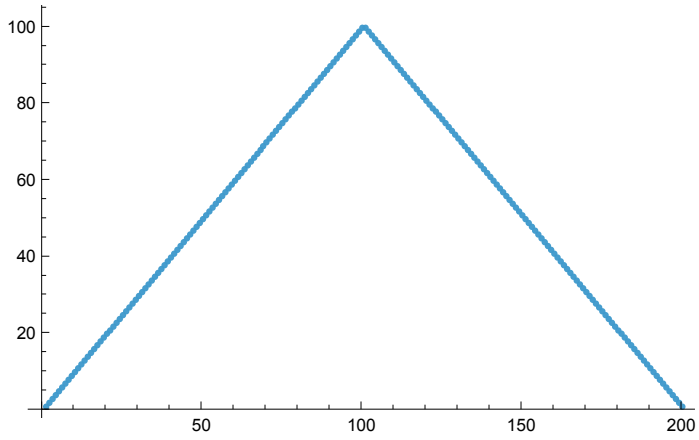
In[358]:=
```
Range[100]
```
Out[358]=
```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22,
 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,
 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62,
 63, 64, 65, 66, 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[359]:=
```
Reverse[Range[4]]
```
Out[359]=
```
{4, 3, 2, 1}
```

In[360]:=
```
Reverse[Range[50]]
```
Out[360]=
```
{50, 49, 48, 47, 46, 45, 44, 43, 42, 41, 40, 39, 38, 37,
 36, 35, 34, 33, 32, 31, 30, 29, 28, 27, 26, 25, 24, 23, 22, 21, 20,
 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1}
```

In[361]:=
```
Join[Range[4], Reverse[Range[4]]]
```
Out[361]=
```
{1, 2, 3, 4, 4, 3, 2, 1}
```

In[362]:=
```
ListPlot[Join[Range[100], Reverse[Range[100]]]]
```
Out[362]=



In[363]:=
```
Range[RandomInteger[10]]
```
Out[363]=
```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
```

In[364]:=
```
Range[10]
```
Out[364]=
```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
```

In[365]:=
```
Range[5]
```
Out[365]=
```
{1, 2, 3, 4, 5}
```

In[366]:=
```
Join[Range[10], Range[10], Range[5]]
```
Out[366]=
```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 1, 2, 3, 4, 5}
```

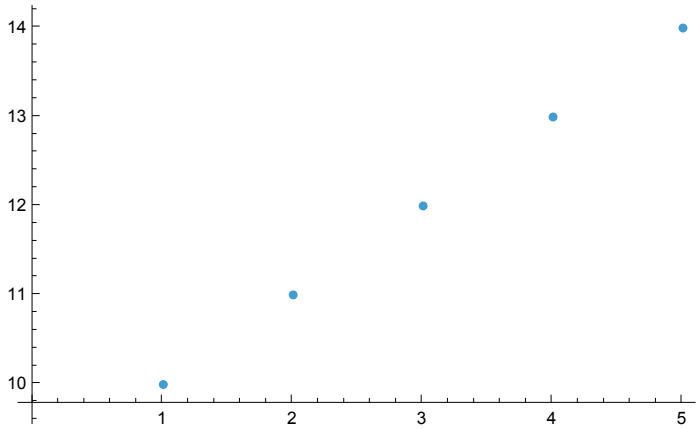
In[367]:=
```
Join[Range[20], Reverse[Range[20]]]
```
Out[367]=
```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19,
 20, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1}
```

In[368]:=
```
Range[4]
```
Out[368]=
```
{1, 2, 3, 4}
```

In[369]:=
```
Join[Range[4], Reverse[Range[5]]]
```
Out[369]=
```
{1, 2, 3, 4, 5, 4, 3, 2, 1}
```

In[370]:=
```
Reverse[Join[Range[5], Range[4], Range[3]]]
```
Out[370]=
```
{3, 2, 1, 4, 3, 2, 1, 5, 4, 3, 2, 1}
```

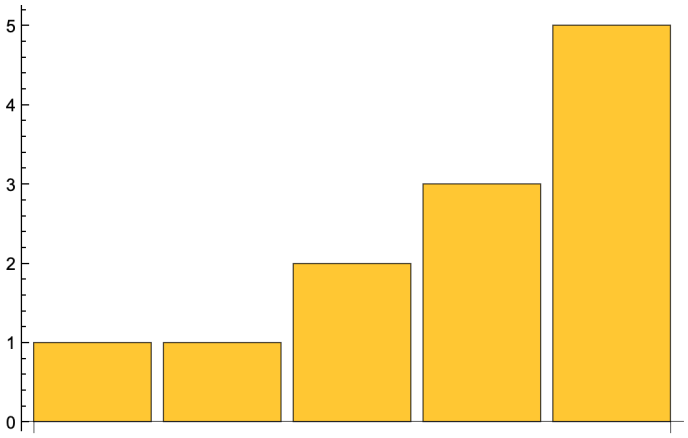
In[371]:=
```
ListPlot[{10, 11, 12, 13, 14}]
```
Out[371]=



In[372]:=
```
Join[Range[10], Reverse[Range[10]], Range[10]]
```
Out[372]=
```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
```

4 | Displaying Lists

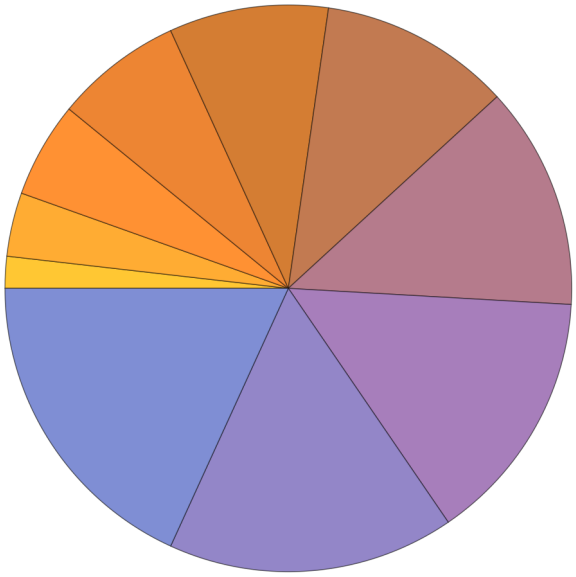
In[373]:=
```
BarChart[{1, 1, 2, 3, 5}]
```
Out[373]=



In[374]:=

```
PieChart[Range[10]]
```

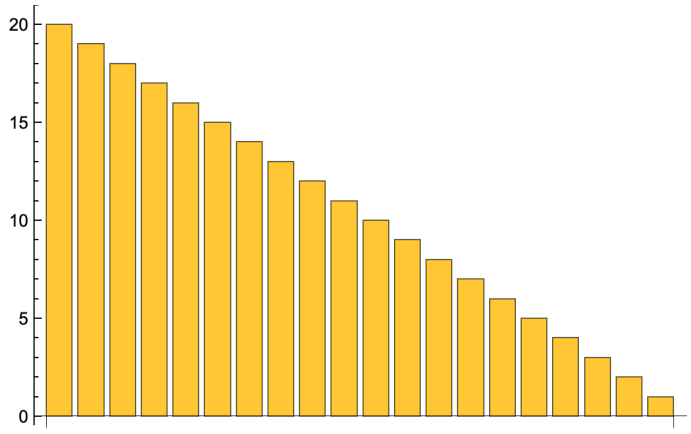
Out[374]=



In[375]:=

```
BarChart[Reverse[Range[20]]]
```

Out[375]=



In[376]:=

```
Column[Range[5]]
```

Out[376]=

1
2
3
4
5

In[377]:=

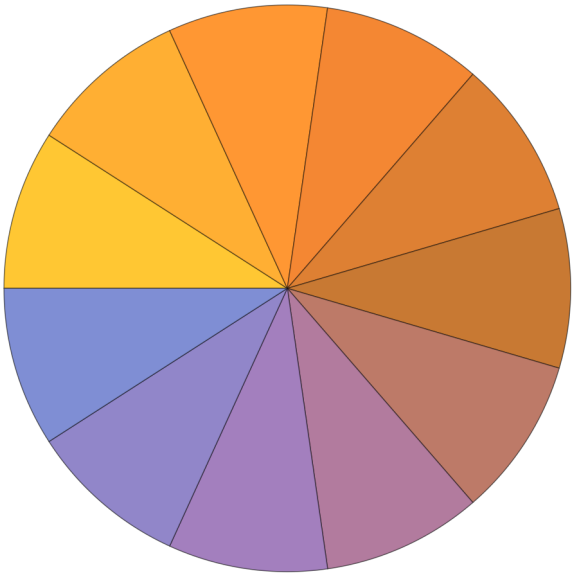
```
NumberLinePlot[{1, 4, 9, 16, 25}]
```

Out[377]=

In[378]:=

```
PieChart[{1, 1, 1, 1, 1, 1, 1, 1, 1, 1}]
```

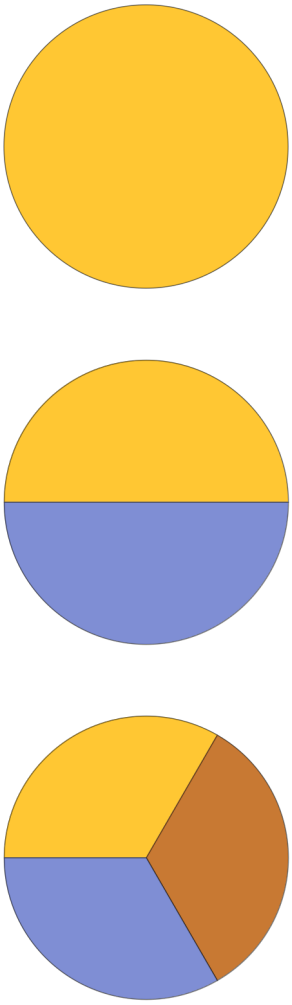
Out[378]=



In[379]:=

```
Column[{PieChart[{1}], PieChart[{1, 1}], PieChart[{1, 1, 1}]}]
```

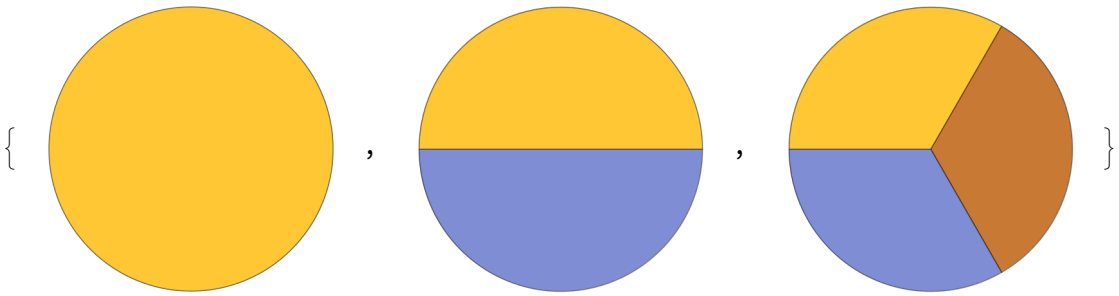
Out[379]=



In[380]:=

```
{PieChart[{1}], PieChart[{1, 1}], PieChart[{1, 1, 1}]}
```

Out[380]=



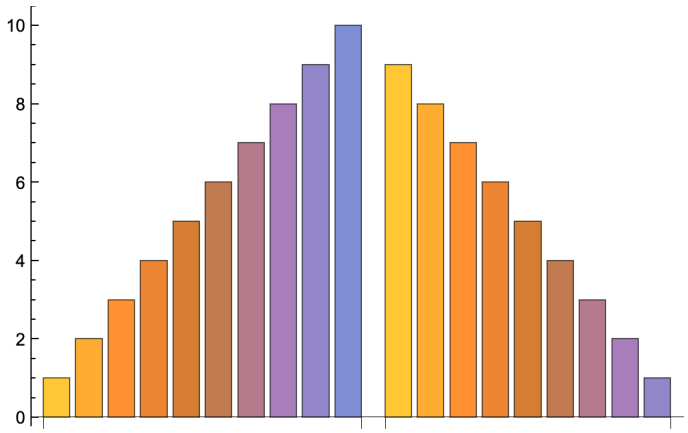
In[381]:=

In[382]:=

In[383]:=

```
BarChart[{Range[10], Reverse[Range[9]]}]
```

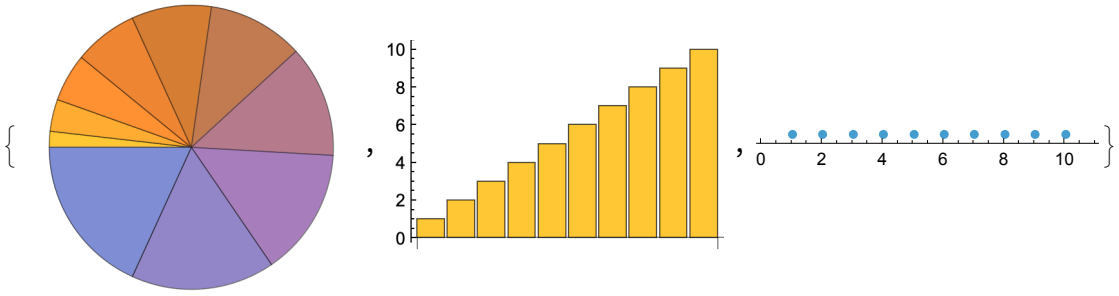
Out[383]=



In[384]:=

```
{PieChart[Range[10]], BarChart[Range[10]], NumberLinePlot[Range[10]]}
```

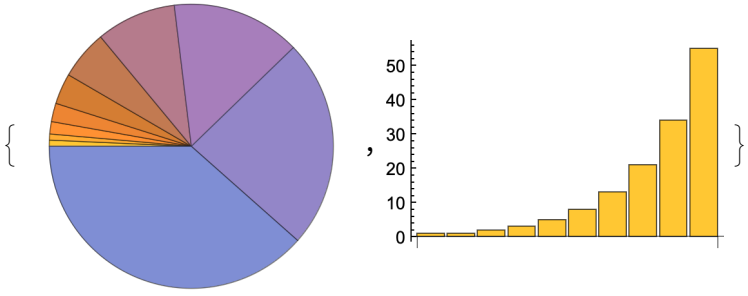
Out[384]=



In[385]:=

```
{PieChart[{1, 1, 2, 3, 5, 8, 13, 21, 34, 55}],
 BarChart[{1, 1, 2, 3, 5, 8, 13, 21, 34, 55}]}
```

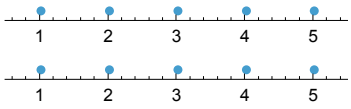
Out[385]=



In[386]:=

```
Column[{NumberLinePlot[Range[5]], NumberLinePlot[Range[5]]}]
```

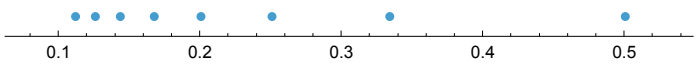
Out[386]=



In[387]:=

```
NumberLinePlot[{1 / 2, 1 / 3, 1 / 4, 1 / 5, 1 / 6, 1 / 7, 1 / 8, 1 / 9}]
```

Out[387]=



In[388]:=

In[389]:=