Tahm — 2025-01-17 — PS 1

In[376]:=
```
1 + 2 + 3
```
Out[376]=
```
6
```

In[377]:=
```
1 + 2 + 3 + 4 + 5
```
Out[377]=
```
15
```

In[378]:=
```
5 ^ 2
```
Out[378]=
```
25
```

In[379]:=
```
3 ^ 4
```
Out[379]=
```
81
```

In[380]:=
```
10 ^ 12
```
Out[380]=
```
1 000 000 000 000
```

In[381]:=
```
3 ^ (7 * 8)
```
Out[381]=
```
523 347 633 027 360 537 213 511 521
```

In[382]:=
```
(4 - 2) * (3 + 4)
```
Out[382]=
```
14
```

In[383]:=
```
29 000 * 73
```
Out[383]=
```
2 117 000
```

In[384]:=
```
-3 + -2 + -1 + 1 + 2 + 3
```
Out[384]=
```
0
```

In[385]:=
```
24 * (1 / 3)
```
Out[385]=
```
8
```

Your first Join command failed. See comment on p. 5.

I didn't mean for you to do all the exercises! But good on you!

10/10

In[386]:=
```
5^100
```
Out[386]=
```
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[387]:=
```
100 - (5^2)
```
Out[387]=
```
75
```

In[388]:=
```
6*5^2+7
```
Out[388]=
```
157
```

In[389]:=
```
3^2-2^3
```
Out[389]=
```
1
```

In[390]:=
```
2^3*3^2
```
Out[390]=
```
72
```

In[391]:=
```
2*(8+-11)
```
Out[391]=
```
-6
```

Chapter 2 Exercises

In[392]:=
```
Plus[7, 6, 5]
```
Out[392]=
```
18
```

In[393]:=
```
Times[2*Plus[3, 4]]
```
Out[393]=
```
14
```

In[394]:=
```
Max[Times[6, 8], Times[5, 9]]
```
Out[394]=
```
48
```

In[395]:=
```
RandomInteger[1000]
```
Out[395]=
```
885
```

In[396]:=
```
Plus[10 + RandomInteger[10]]
```
Out[396]=
```
16
```

In[397]:=
```
Times[5, 4, 3, 2]
```
Out[397]=
```
120
```

In[398]:=
```
Times[Plus[8, 7], Plus[9, 2]]
```
Out[398]=
```
165
```

In[399]:=
```
Divide[Subtract[26, 89], 9]
```
Out[399]=
```
-7
```

In[400]:=
```
Subtract[100, Power[5, 2]]
```
Out[400]=
```
75
```

In[401]:=
```
Max[3^5, 5^3]
```
Out[401]=
```
243
```

In[402]:=
```
Times[3, Max[3^5, 5^3]]
```
Out[402]=
```
729
```

In[403]:=
```
Plus[RandomInteger[1000], RandomInteger[1000]]
```
Out[403]=
```
1011
```

Chapter 3 Exercises

In[404]:=
```
Range[4]
```
Out[404]=
```
{1, 2, 3, 4}
```

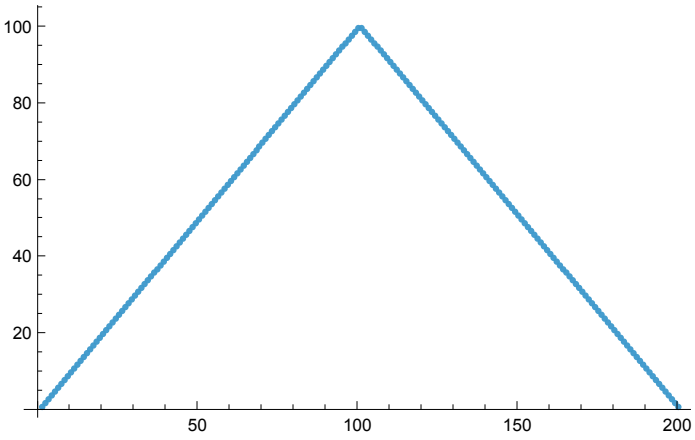
In[405]:=
```
Range[100]
```
Out[405]=
```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22,
 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,
 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62,
 63, 64, 65, 66, 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[406]:=
```
Reverse[Range[4]]
```
Out[406]=
```
{4, 3, 2, 1}
```

In[407]:=
```
Reverse[Range[50]]
```
Out[407]=
```
{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[408]:=
```
Join[Range[4], Reverse[Range[4]]]
```
Out[408]=
```
{1, 2, 3, 4, 4, 3, 2, 1}
```

In[409]:=
```
ListPlot[Join[Range[100], Reverse[Range[100]]]]
```
Out[409]=



In[410]:=
```
Range[RandomInteger[10]]
```
Out[410]=
```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
```

In[411]:=
```
Range[10]
```
Out[411]=
```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
```

This is the one that failed.

Do you see why? Mathematica had no idea what to do with what you wrote, so it just doesn't do anything. Sometimes when Mathematica has no idea it will also spew an error message. Other times it just assumes you know what you are doing and leaves what you wrote as is.

In[412]:=
```
Join[1, 2, 3, 4, 5]
```
Out[412]=
```
Join[1, 2, 3, 4, 5]
```

In[413]:=
```
Join[Range[10], Range[10], Range[5]]
```
Out[413]=
```
{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}
```

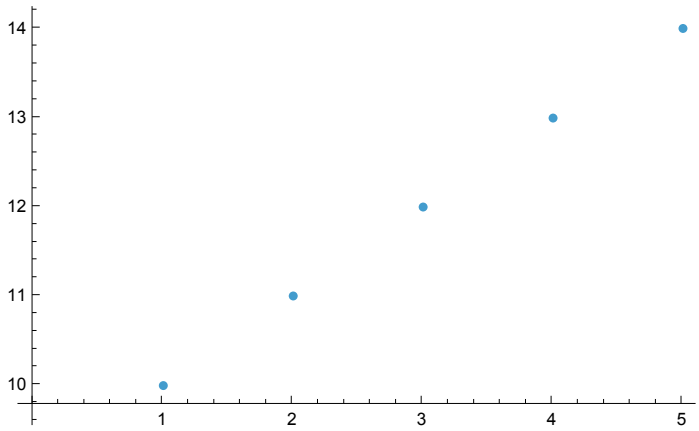
In[414]:=
```
Join [Range[20], Reverse[Range[20]]]
```
Out[414]=
```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19,
 20, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1}
```

In[415]:=
```
Reverse[Reverse[Range[4]]]
```
Out[415]=
```
{1, 2, 3, 4}
```

In[416]:=
```
Join[Range[4], Reverse[Range[4]]]
```
Out[416]=
```
{1, 2, 3, 4, 4, 3, 2, 1}
```

In[417]:=
```
Join[Reverse[Range[3]], Reverse[Range[4], Reverse[Range[5]]]]
```
Out[417]=
```
{3, 2, 1, 4, 3, 2, 1}
```

In[418]:=
```
ListPlot[{10, 11, 12, 13, 14}]
```
Out[418]=



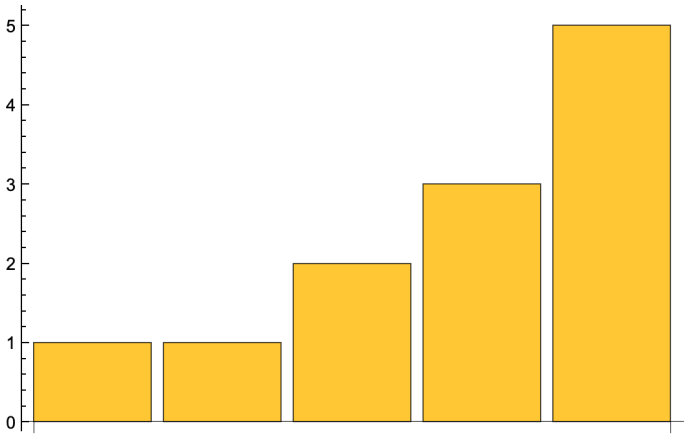
In[419]:=
```
Join[Range[10], Reverse[Range[10]], Range[10]]
```
Out[419]=
```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
```

Chapter 4

In[420]:=

```
BarChart[{1, 1, 2, 3, 5}]
```

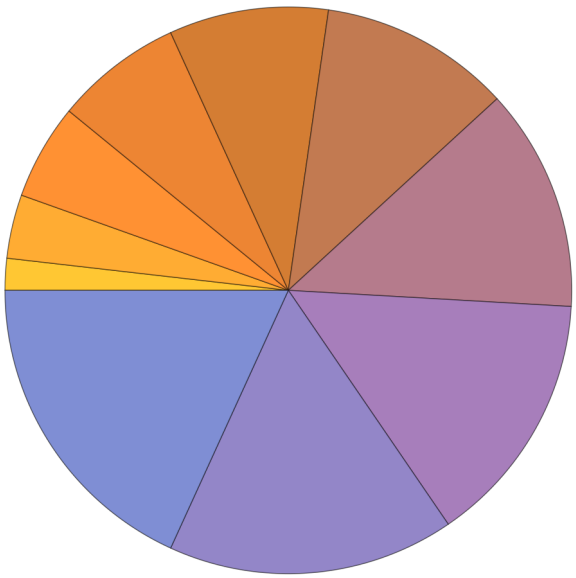
Out[420]=



In[421]:=

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

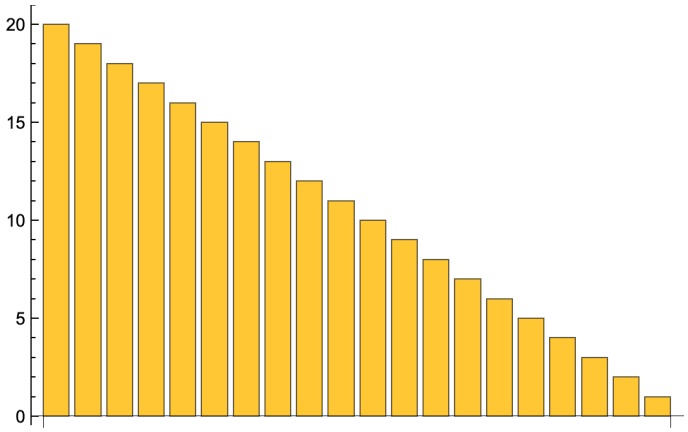
Out[421]=



In[422]:=

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

Out[422]=



In[423]:=

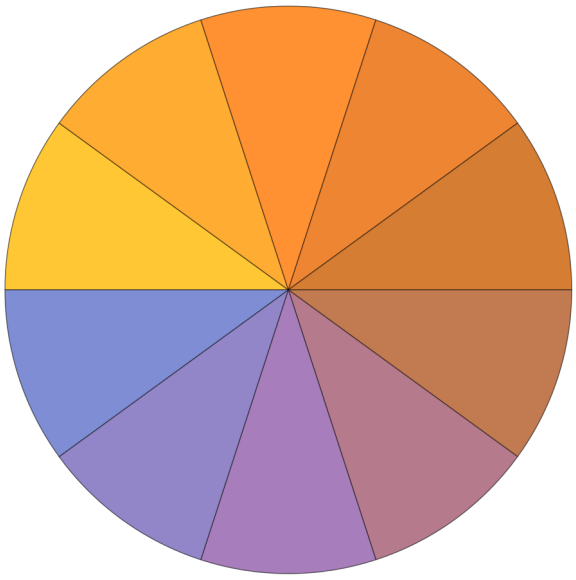
```
NumberLinePlot[{1, 2, 3, 4, 5}]
```

Out[423]=

In[424]:=

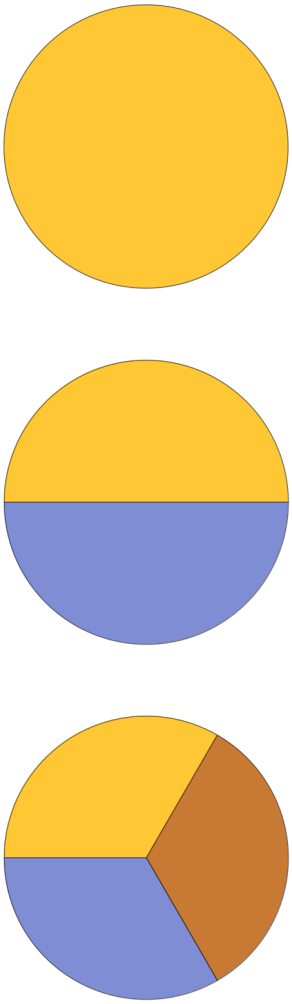
```
PieChart[{List[1, 1, 1, 1, 1, 1, 1, 1, 1, 1]}]
```

Out[424]=



In[425]:=
```
Column[{PieChart[{1}], PieChart[{1, 1}], PieChart[{1, 1, 1}]}]
```

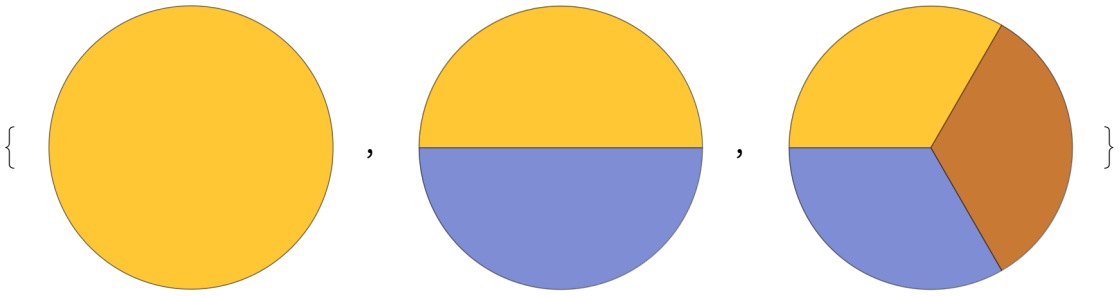
Out[425]=



In[426]:=

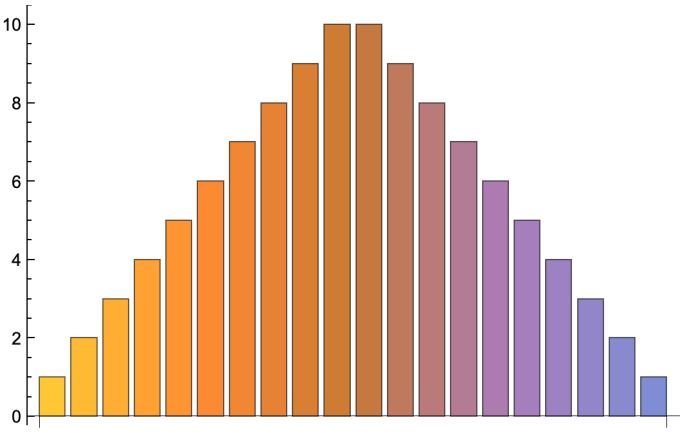
In[427]:=
```
Join[{PieChart[{1}], PieChart[{1, 1}], PieChart[{1, 1, 1}]}]
```

Out[427]=



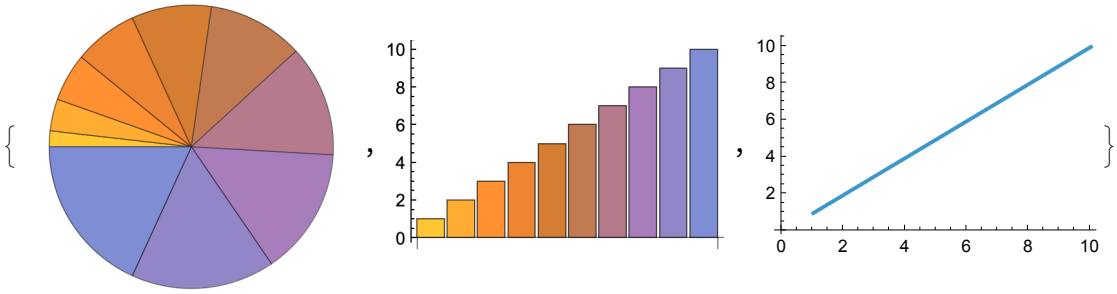
In[428]:=
```
BarChart[{Join[Range[10], Reverse[Range[10]]]}]
```

Out[428]=



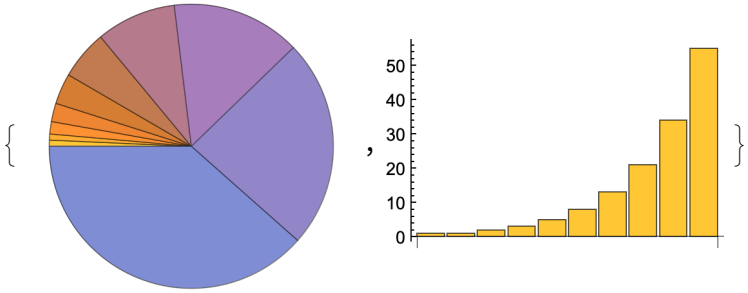
In[429]:=
```
List[PieChart[{Join[Range[10]]}],
 BarChart[{Join[Range[10]]}], ListLinePlot[{Join[Range[10]]}]]
```

Out[429]=



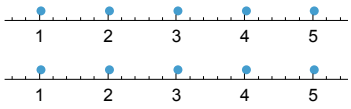
In[430]:=
```
List[PieChart[{1, 1, 2, 3, 5, 8, 13, 21, 34, 55}],
 BarChart[{1, 1, 2, 3, 5, 8, 13, 21, 34, 55}]]
```

Out[430]=



In[431]:=
```
Column[{NumberLinePlot[{1, 2, 3, 4, 5}], NumberLinePlot[{1, 2, 3, 4, 5}]}]
```

Out[431]=



In[432]:=
```
NumberLinePlot[{1 / 2, 1 / 3, 1 / 4, 1 / 5, 1 / 6, 1 / 7, 1 / 8, 1 / 9}]
```

Out[432]=