

Rania — 2025-01-17 — PS 1

Waves

Rania

Exercise Section 1-4

Section 1

1.1-1.9

+1.1-+1.8

In[449]:=

$1 + 2 + 3$

$1 + 2 + 3 + 4 + 5$

$1 \times 2 \times 3 \times 4 \times 5$

5×5

3^4

10^{12}

$3^{(7 \times 8)}$

$(4 - 2) * (3 + 4)$

$29\,000 * 73$

$-3 + -2 + -1 + 0 + 1 + 2 + 3$

$24 / 3$

5^{100}

$100 - 5^2$

$6 * 5^2 + 7$

$3^2 - 2^3$

$2^3 * 3^2$

$2 * (8 - 11)$

Out[449]=

6

Out[450]=

15

Out[451]=

120

Out[452]=

25

Out[453]=

81

Out[454]=

1 000 000 000 000

Out[455]=

523 347 633 027 360 537 213 511 521

Out[456]=

14

Out[457]=

2 117 000

Out[458]=

0

Out[459]=

8

Out[460]=

7 888 609 052 210 118 054 117 285 652 827 862 296 732 064 351 090 230 047 702 789 306 640 625

Out[461]=

75

Out[462]=

157

Out[463]=

1

Out[464]=

72

Out[465]=

-6

Section 2

2.1-2.5

+2.1-+2.8

```

In[466]:=
  Plus[7, 6, 5]
  Times[2, Plus[3 + 4]]
  Max[Times[6 * 8], Times[5 * 9]]
  RandomInteger[1000]
  Plus[RandomInteger[10], 10]
  Times[5, 4, 3, 2]
  Subtract[2, 3]
  Times[Plus[8 + 7], Plus[9 + 2]]
  Divide[Subtract[26, 89], 9]
  Subtract[100, Power[5, 2]]
  Max[3^5, 5^3]
  Times[3, Max[4^3, 3^4]]
  Plus[RandomInteger[1000], RandomInteger[1000]]

```

```
Out[466]=
```

```
18
```

```
Out[467]=
```

```
14
```

```
Out[468]=
```

```
48
```

```
Out[469]=
```

```
437
```

```
Out[470]=
```

```
17
```

```
Out[471]=
```

```
120
```

```
Out[472]=
```

```
-1
```

```
Out[473]=
```

```
165
```

```
Out[474]=
```

```
-7
```

```
Out[475]=
```

```
75
```

```
Out[476]=
```

```
243
```

```
Out[477]=
```

```
243
```

```
Out[478]=
```

```
1085
```

Section 3

3.1-3.11

+3.1 ->3.5

In[479]:=

```

Range[4]
Range[100]
Reverse[Range[4]]
Reverse[Range[50]]
Join[Range[4], Reverse[Range[4]]]
ListPlot[Join[Range[100], Reverse[Range[100]]]]
Range[RandomInteger[10]]

Reverse[Reverse[Range[10]]] ==
  Range[10]
Join[{1, 2}, Join[{3, 4}, {5}]] ==
  Range[5]
Join[Range[10], Join[Range[10], Range[5]]] ==
  Join[Range[10], Range[10], Range[5]]
Reverse[Join[Range[20], Reverse[Range[20]]]] == Join[Range[20], Reverse[Range[20]]]

Reverse[Reverse[Range[4]]]
Join[Range[5], Reverse[Range[4]]]
Join[Reverse[Range[3]], Reverse[Range[4]], Reverse[Range[5]]]

ListPlot[{10, 11, 12, 13, 14}]

Join[Join[Range[10], Reverse[Range[10]]], Range[10]] ==
  Join[Range[10], Reverse[Range[10]], Range[10]]

```

Out[479]=

{1, 2, 3, 4}

Out[480]=

```

{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}

```

Out[481]=

{4, 3, 2, 1}

Out[482]=

```

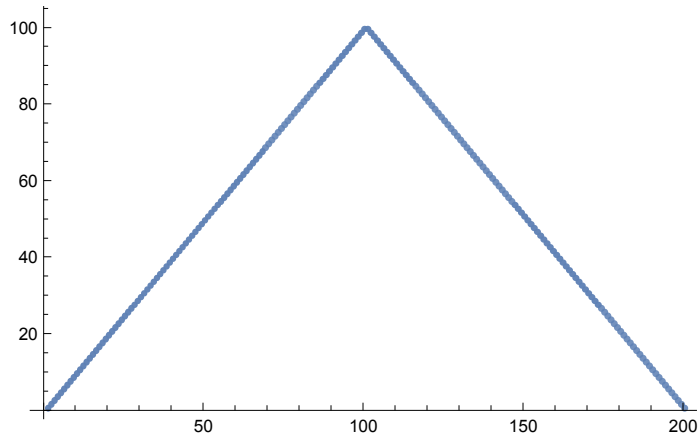
{50, 49, 48, 47, 46, 45, 44, 43, 42, 41, 40, 39, 38, 37,
 36, 35, 34, 33, 32, 31, 30, 29, 28, 27, 26, 25, 24, 23, 22, 21, 20,
 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1}

```

Out[483]=

{1, 2, 3, 4, 4, 3, 2, 1}

Out[484]=



Out[485]=

 $\{1, 2, 3, 4, 5, 6, 7, 8\}$

Out[486]=

True

Out[487]=

True

Out[488]=

True

Out[489]=

True

Out[490]=

 $\{1, 2, 3, 4\}$

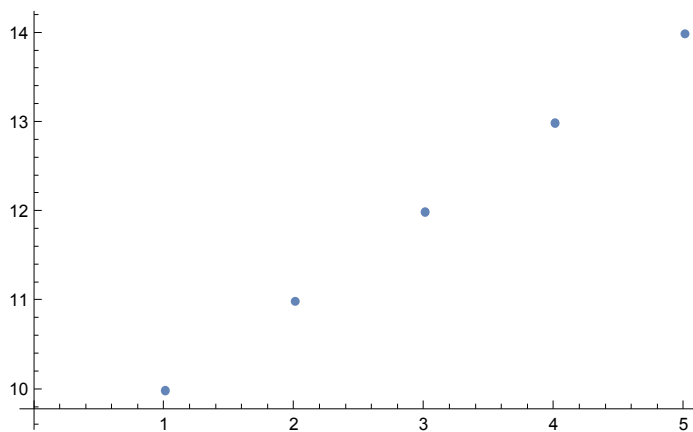
Out[491]=

 $\{1, 2, 3, 4, 5, 4, 3, 2, 1\}$

Out[492]=

 $\{3, 2, 1, 4, 3, 2, 1, 5, 4, 3, 2, 1\}$

Out[493]=



Out[494]=

True

Section 4

In[495]:=

```

BarChart[{1, 1, 2, 3, 5}]
PieChart[Range[10]]
BarChart[Reverse[Range[20]]]
Column[{1, 2, 3, 4, 5}]
NumberLinePlot[{1, 4, 9, 16, 25}]
PieChart[{1, 1, 1, 1, 1, 1, 1, 1, 1, 1}]
Column[{PieChart[{1}], PieChart[{1, 1}], PieChart[{1, 1, 1}]}]
{PieChart[{1}], PieChart[{1, 1}], PieChart[{1, 1, 1}]}
BarChart[Join[Range[10], Reverse[Range[9]]]]
{PieChart[Range[10]], BarChart[Range[10]], ListLinePlot[Range[10]]}

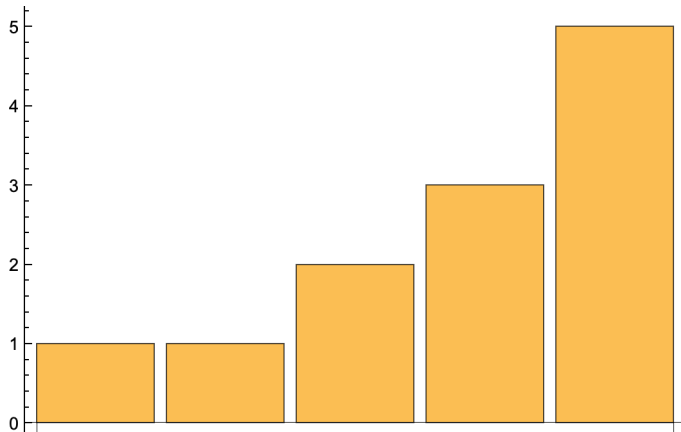
listSection4 = {1, 1, 2, 3, 5, 8, 13, 21, 34, 55}
{PieChart[listSection4], BarChart[listSection4]}

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

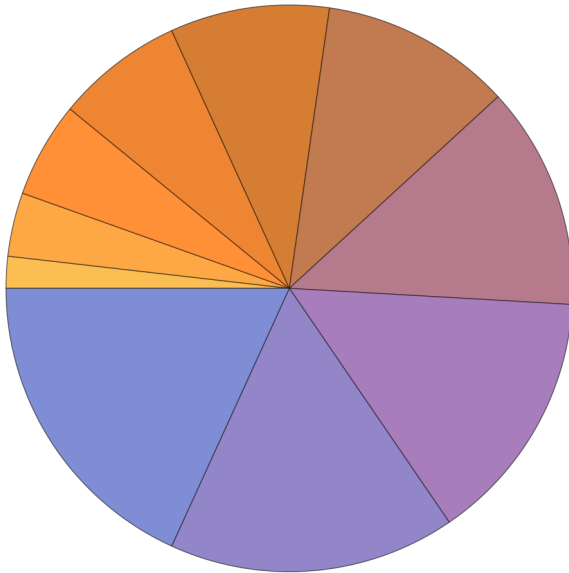
NumberLinePlot[{1/2, 1/2, 1/4, 1/5, 1/6, 1/7, 1/8, 1/9}]

```

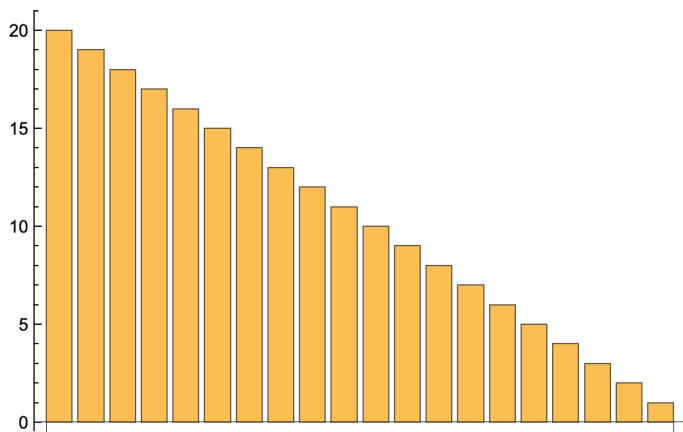
Out[495]=



Out[496]=



Out[497]=



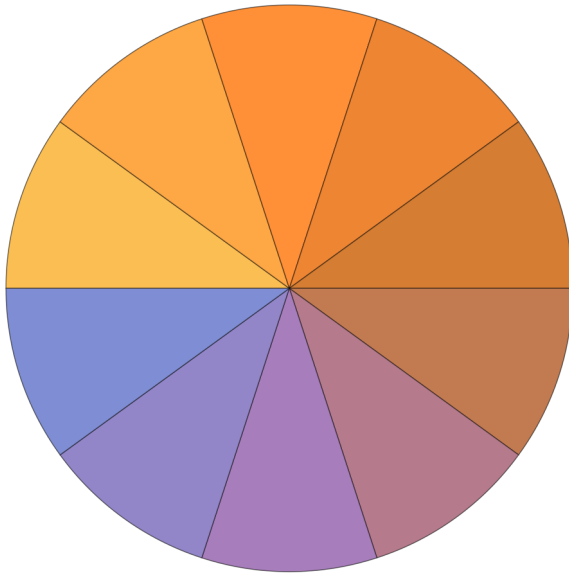
Out[498]=

1
2
3
4
5

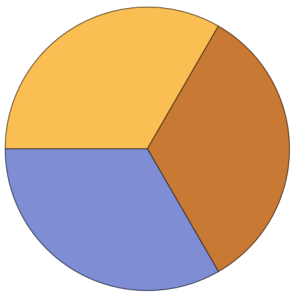
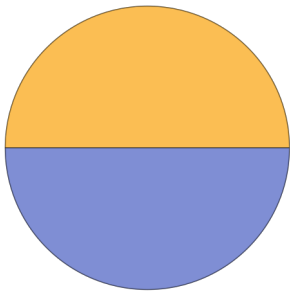
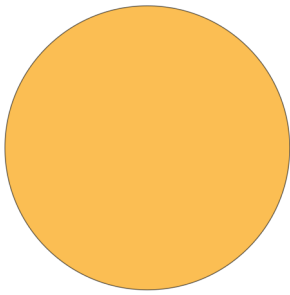
Out[499]=



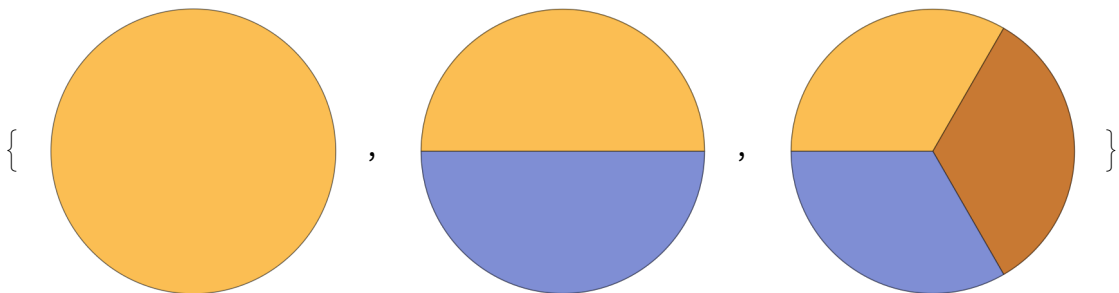
Out[500]=



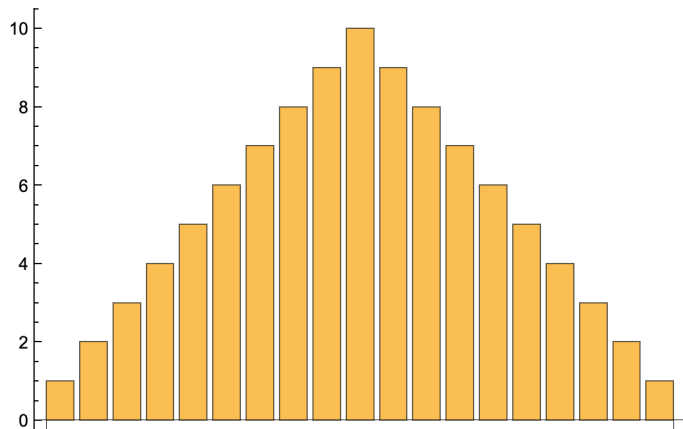
Out[501]=



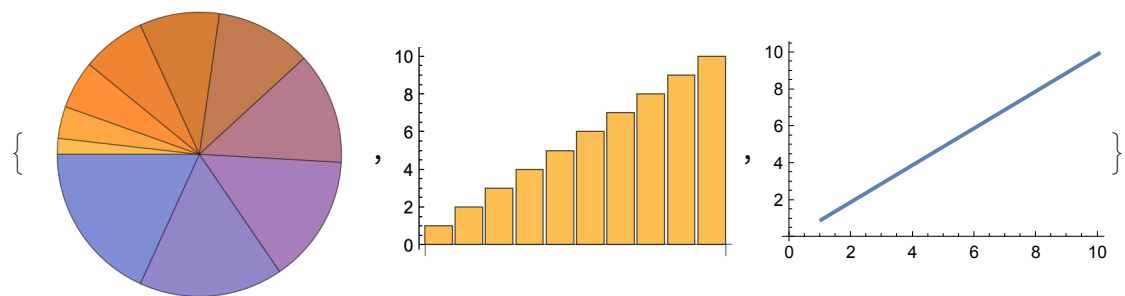
Out[502]=



Out[503]=



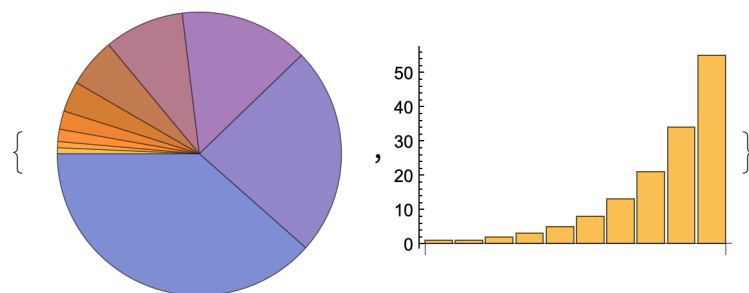
Out[504]=



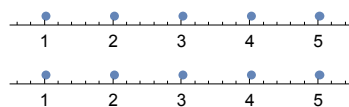
Out[505]=

{1, 1, 2, 3, 5, 8, 13, 21, 34, 55}

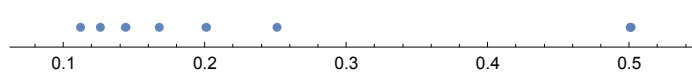
Out[506]=



Out[507]=



Out[508]=



In[509]:=

In[510]:=