Jeremy — PS 2 — 2025-01-21

Exercises from EIWL3 Section 5
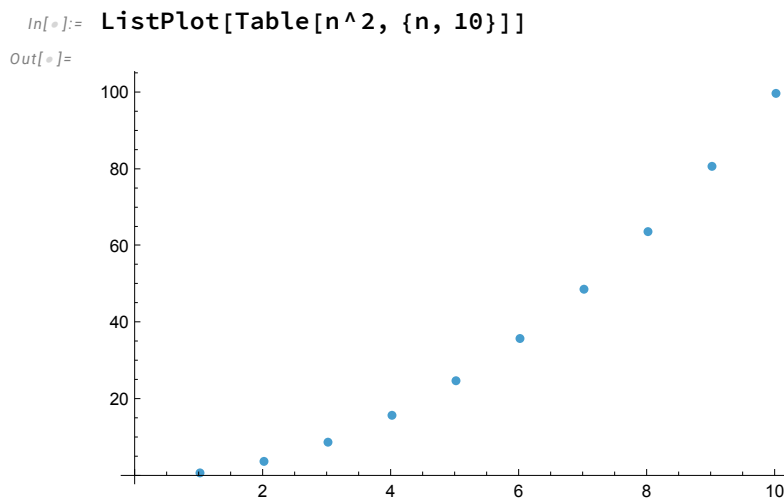
In[ ]:= `Reverse[Table[n^2, {n, 10}]]`

Out[ ]=
{100, 81, 64, 49, 36, 25, 16, 9, 4, 1}

Nice!

In[ ]:= `Total[Table[n^2, {n, 10}]]`

Out[ ]=
385

See comment on p. 5.

10/10

In[ ]:= `ListPlot[Table[n^2, {n, 10}]]`

Out[ ]=

In[ ]:= `Sort[Join[Range[4], Range[4]]]`

Out[ ]=
{1, 1, 2, 2, 3, 3, 4, 4}

In[ ]:= `Range[10, 20]`

Out[ ]=
{10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20}

In[ ]:= `Sort[Join[Table[n^2, {n, 5}], Table[n^3, {n, 5}]]]`

Out[ ]=
{1, 1, 4, 8, 9, 16, 25, 27, 64, 125}
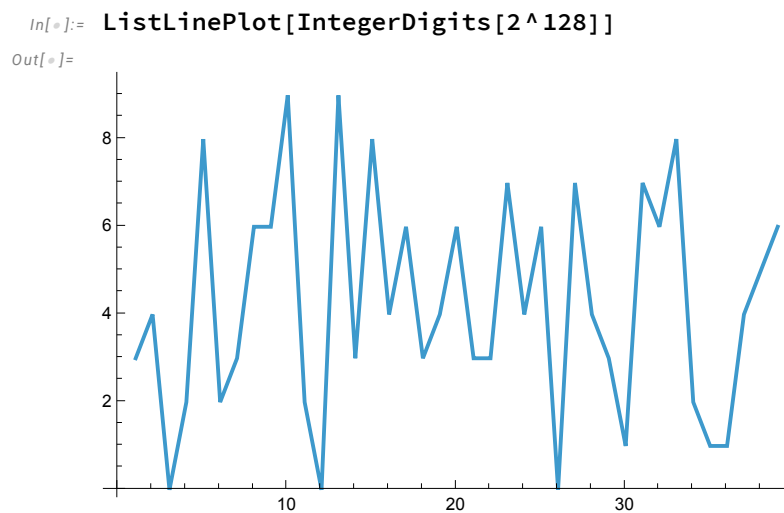
In[ ]:= `Length[IntegerDigits[2^128]]`

Out[ ]=
39

In[ ]:= `First[IntegerDigits[2^32]]`

Out[ ]=

4

In[ ]:= `Table[Part[IntegerDigits[2^100], n], {n, 10}]`

Out[ ]=

{1, 2, 6, 7, 6, 5, 0, 6, 0, 0}

In[ ]:= `Last[Sort[IntegerDigits[2^20]]]`

Out[ ]=

8

In[ ]:= `Count[IntegerDigits[2^1000], 0]`

Out[ ]=

28

In[ ]:= `Part[Sort[IntegerDigits[2^20]], 2]`

Out[ ]=

1

In[ ]:= `ListLinePlot[IntegerDigits[2^128]]`

Out[ ]=

In[ ]:= `Drop[Take[Range[100], 20], 10]`

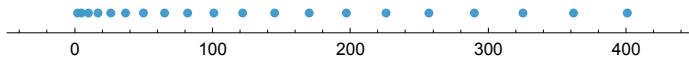*Out[ ]=*

{11, 12, 13, 14, 15, 16, 17, 18, 19, 20}

Exercises from EIWL3 Section 6

In[ ]:= `Table[1000, 5]`

Out[ ]=

{1000, 1000, 1000, 1000, 1000}

In[ ]:= `Table[n^3, {n, 10, 20}]`

Out[ ]=

{1000, 1331, 1728, 2197, 2744, 3375, 4096, 4913, 5832, 6859, 8000}

In[ ]:= `NumberLinePlot[Table[n^2, {n, 20}]]`

Out[ ]=

In[ ]:= `Table[n * 2, {n, 10}]`

Out[ ]=

{2, 4, 6, 8, 10, 12, 14, 16, 18, 20}

In[ ]:= `Table[n, {n, 10}]`

Out[ ]=

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
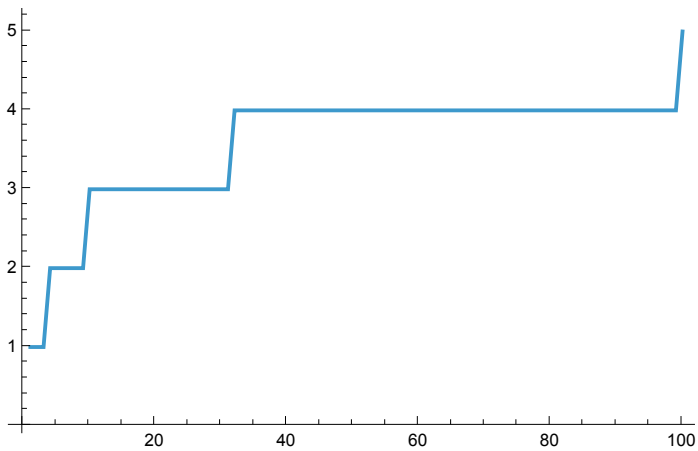
In[ ]:= `BarChart[Table[n^2, {n, 10}]]`

Out[ ]=
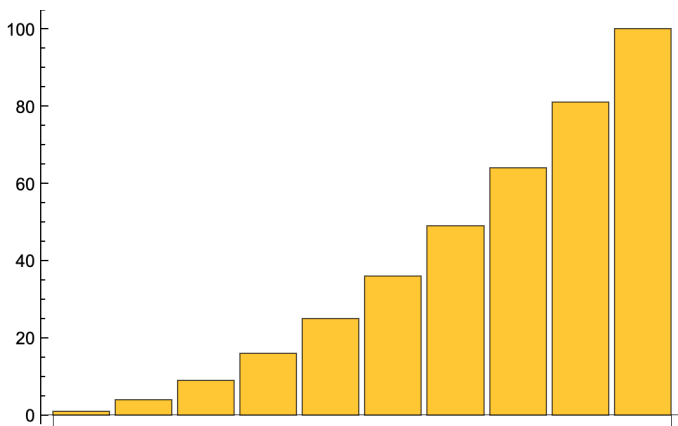
In[ ]:= `Table[IntegerDigits[n^2], {n, 10}]`

Out[ ]=

{{1}, {4}, {9}, {1, 6}, {2, 5}, {3, 6}, {4, 9}, {6, 4}, {8, 1}, {1, 0, 0}}

In[ ]:= `ListLinePlot[Table[Length[IntegerDigits[n^2]], {n, 100}]]`

Out[ ]=

In[ ]:= `Table[Part[IntegerDigits[n^2], 1], {n, 20}]`

Out[ ]=

{1, 4, 9, 1, 2, 3, 4, 6, 8, 1, 1, 1, 1, 1, 2, 2, 2, 3, 3, 4}

In[ ]:= `ListLinePlot[Table[Part[IntegerDigits[n^2], 1], {n, 100}]]`

Out[ ]=

Exercises from EIWL3 Section 7

In[ ]:= `{Red, Yellow, Green}`

Out[ ]=

{■, ▢, ■}

In[ ]:= `Column[{Red, Yellow, Green}]`

Out[ ]=

■
▢
■

In[ ]:= `ColorNegate[Orange]`

Out[ ]=

■

In[ ]:= `Table[Hue[n], {n, 0, 1, 0.02}]`

Out[ ]=

{■, ■}

In[ ]:= `Table[RGBColor[1, n, 1], {n, 0, 1, 0.05}]`

Out[ ]=

{■, ■, ■, ■, ■, ■, ■, ■, ■, ■, ■, ▢, ▢, ▢, ▢, ▢, ▢, ▢, ▢, ▢, ▢}

In[ ]:= `Blend[{Pink, Yellow}]`

Out[ ]=

■

In[ ]:= `Table[Blend[{Yellow, Hue[n]}], {n, 0, 1, 0.05}]`

Out[ ]=

{ ■, ■ }

In[ ]:= `Table[{n, Hue[n]}, {n, 0, 1, 0.1}]`

Out[ ]=

{{0., ■}, {0.1, ■}, {0.2, ■}, {0.3, ■}, {0.4, ■},
 {0.5, ■}, {0.6, ■}, {0.7, ■}, {0.8, ■}, {0.9, ■}, {1., ■}}

Oops, you are missing
a Style[] function call.
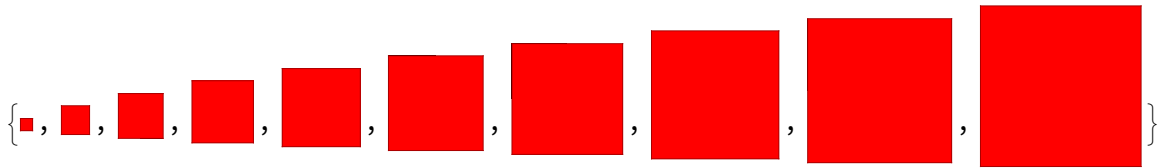You meant:
Table[Style[i, Hue[i]], {i, 0.0, 1.0, 0.1}].

In[ ]:= `Style[Purple, 100]`

Out[ ]=

■

In[ ]:= `Table[Style[Red, n], {n, 10, 100, 10}]`

Out[ ]=

{ ■, ■, ■, ■, ■, ■, ■, ■, ■, ■ }

In[ ]:= `Style[Style[999, Red], 100]`

Out[ ]=

999

In[ ]:= `Table[Style[n^2, n^2], {n, 10}]`

Out[ ]=

{ , ₄, ₉, 16, 25, 36, 49, 64, 81, 100 }

In[ ]:= `Table[Part[{Red, Yellow, Green}, RandomInteger[2] + 1], 100]`

Out[ ]=

{ ■,
  ■,
  ■,
  ■, ■ }
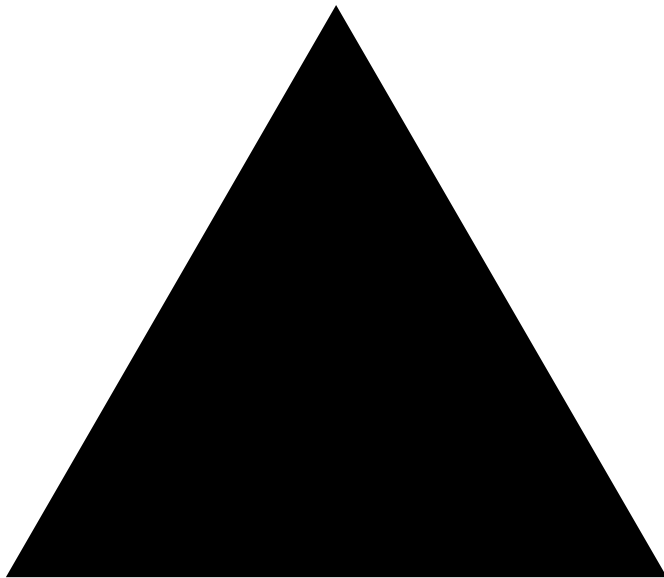
```
In[ ]:= Table[Style[Part[IntegerDigits[2^1000], n],
        3 * Part[IntegerDigits[2^1000], n]], {n, 50}]
```

Out[ ]=

$\{., \ , 7, ., 5, \ , 8, 6, \ , 7, ., 8, 6, {}_2, 6, 7, {}_3, {}_2, \ , 9, {}_4, 8, {}_4, {}_2, 5,$

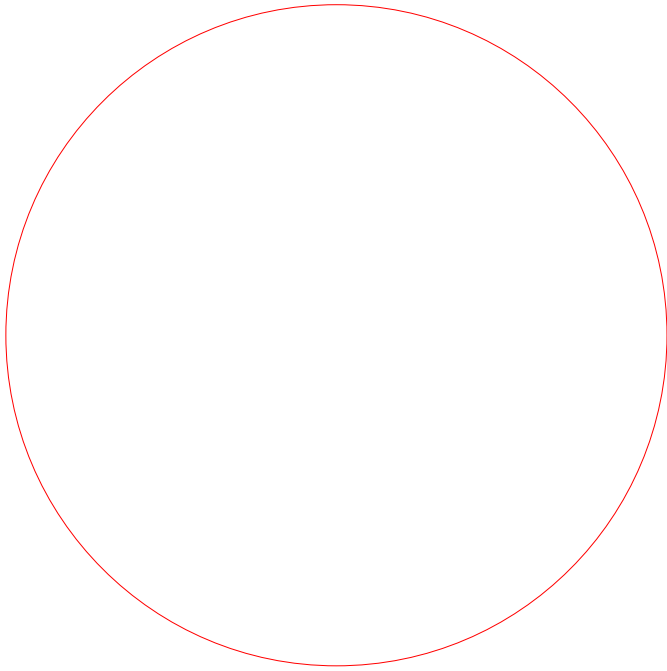$\ , {}_4, 9, \ , 6, \ , \ , \ , ., 8, ., \ , 5, 6, ., {}_4, \ , {}_4, 8, ., ., 7, \ , 5, 5\}$

Exercises from EIWL3 Section 8
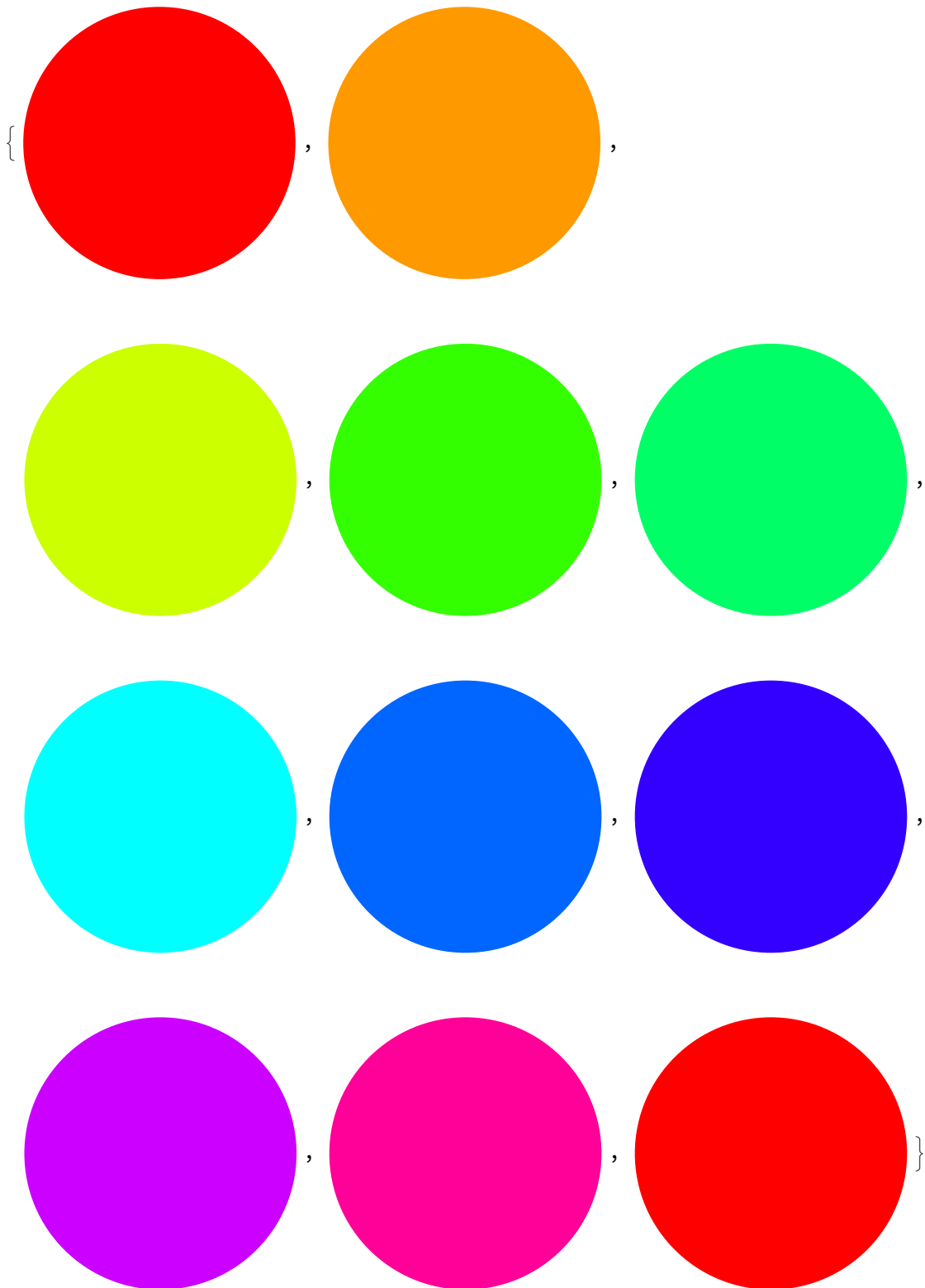
```
In[ ]:= Graphics[RegularPolygon[3]]
```

Out[ ]=

In[ ]:= `Graphics[Style[Circle[], Red]]`

Out[ ]=

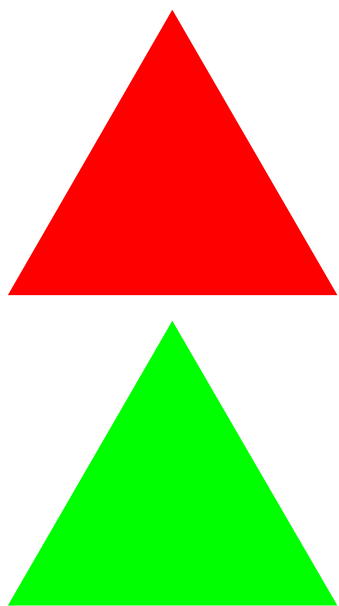*In[ ]:=* `Graphics[Style[RegularPolygon[8], Red]]`

Out[ ]=
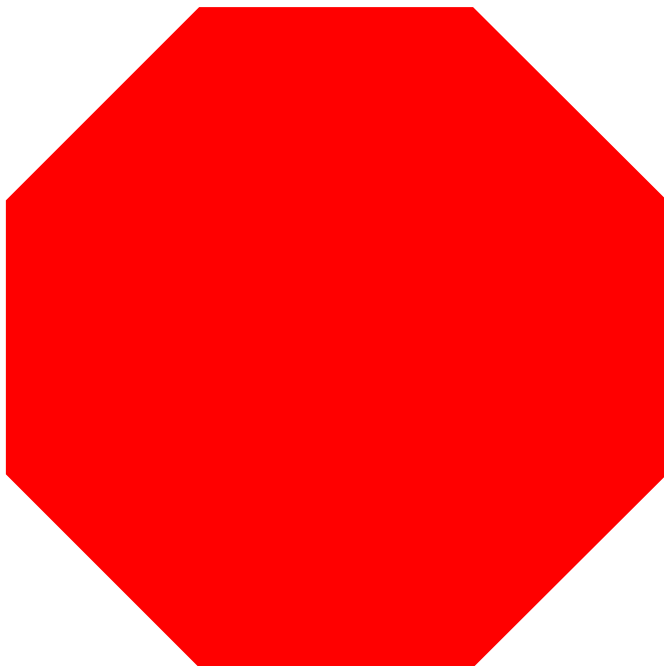
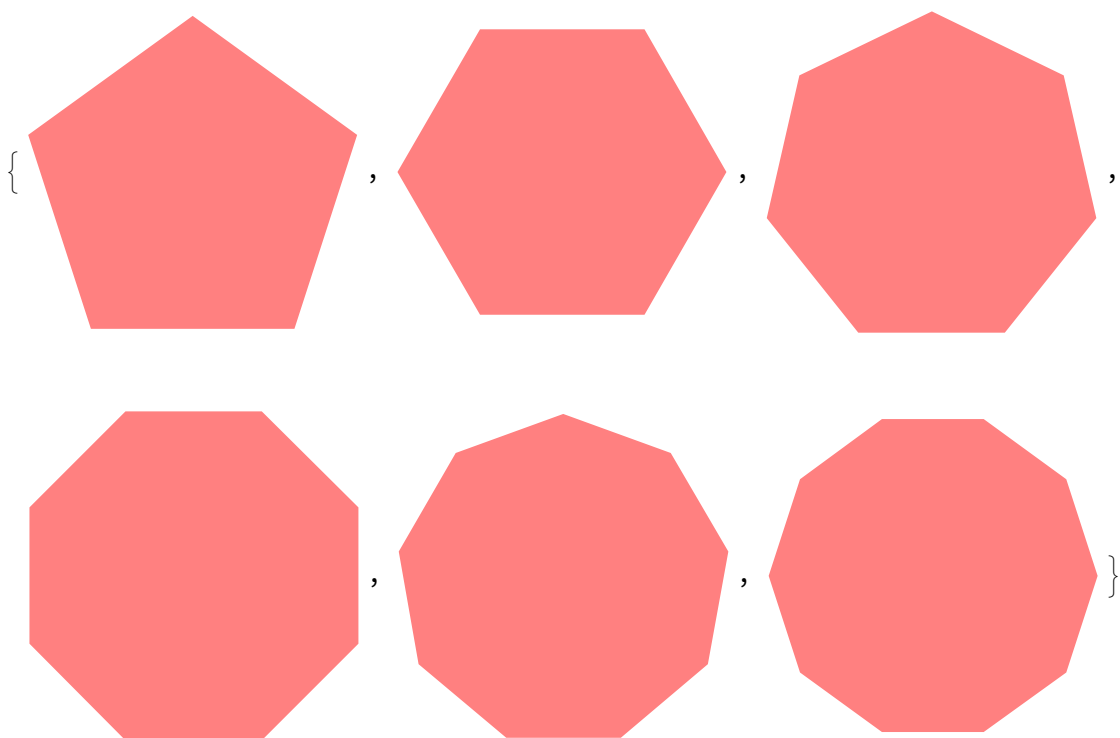In[ ]:= `Table[Graphics[Style[Disk[], Hue[n]]], {n, 0, 1, 0.1}]`

Out[ ]=

In[ ]:= `Column[{Graphics[Style[RegularPolygon[3], Red]],`
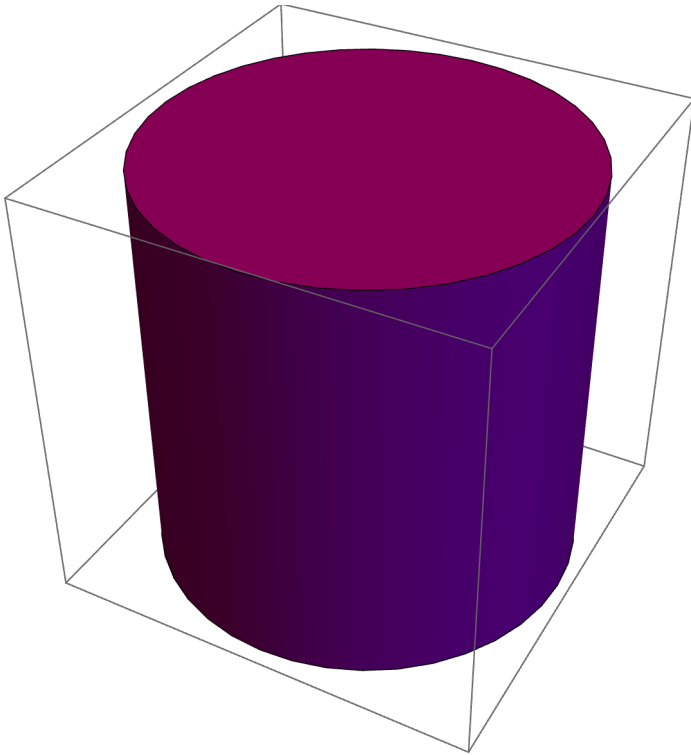`Graphics[Style[RegularPolygon[3], Green]]}]`

Out[ ]=

In[ ]:= `Table[Graphics[Style[RegularPolygon[n], Pink]], {n, 5, 10}]`

Out[ ]=

In[ ]:= `Graphics3D[Style[Cylinder[], Purple]]`

Out[ ]=

In[ ]:= `Graphics[Table[Style[RegularPolygon[9 - n], RandomColor[]], {n, 0, 6}]]`

Out[ ]=