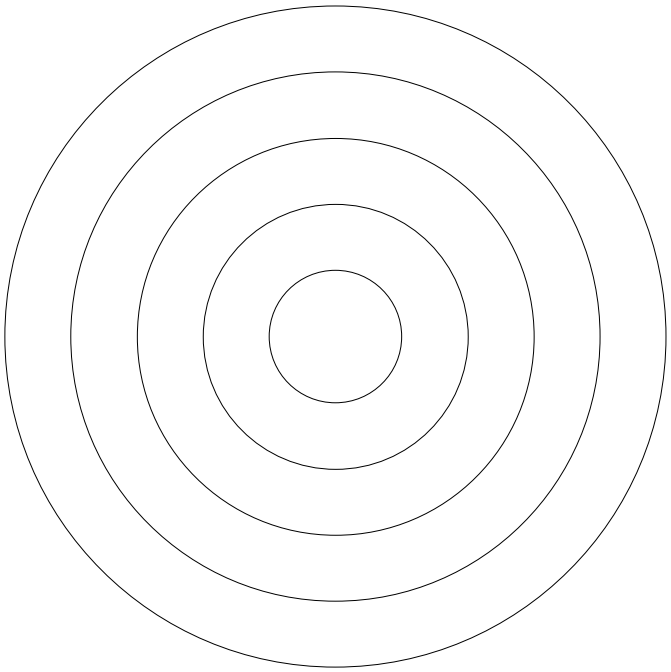
Brian — PS 5 — 2025-02-04 — Solution

Exercises from *EIWL3* Section 14

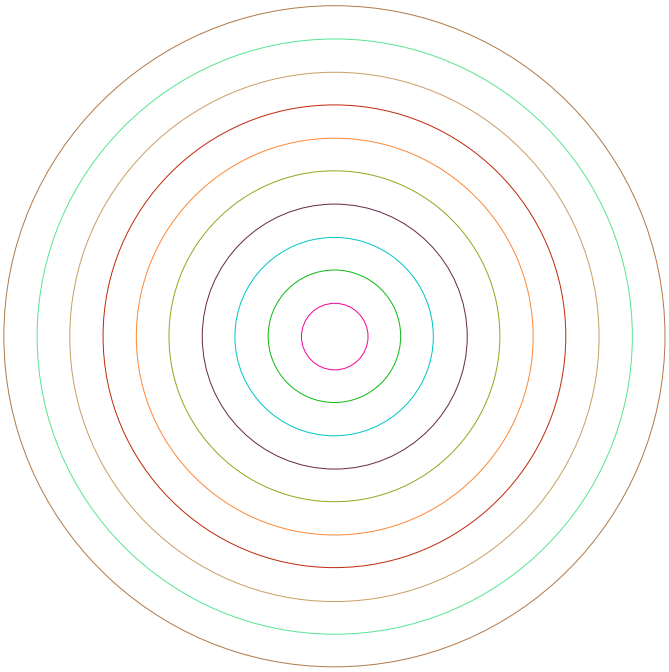
In[22]:=
```
(* 14.1 *) Graphics[Table[Circle[{0, 0}, r], {r, 1, 5}]]
```

Out[22]=



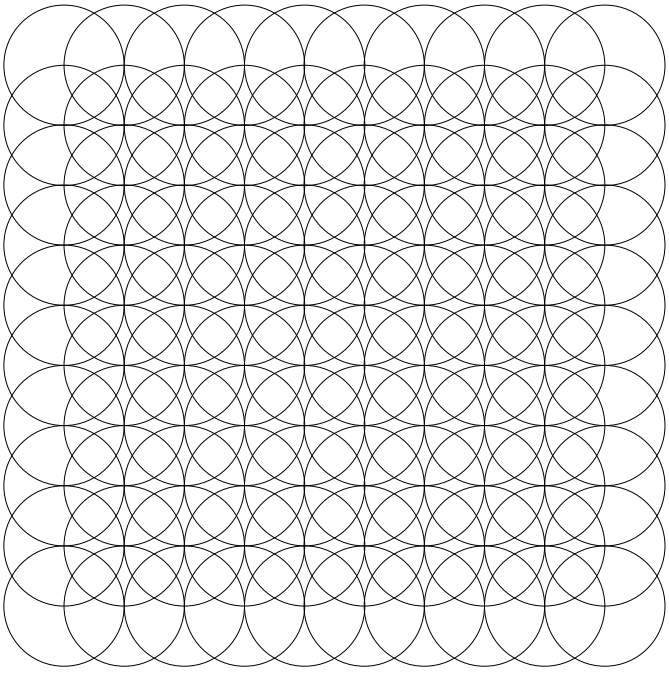
In[23]:=
```
(* 14.2 *) Graphics[Table[Style[Circle[{0, 0}, r], RandomColor[]], {r, 1, 10}]]
```

Out[23]=



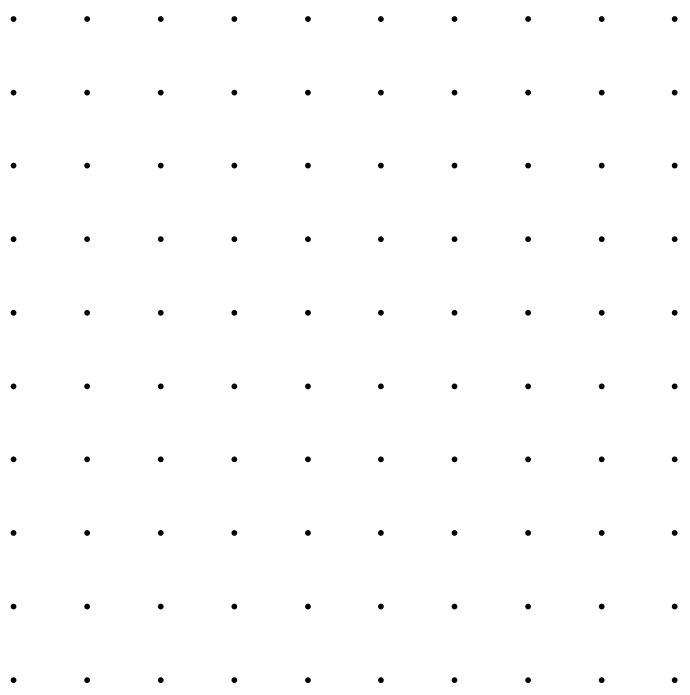
In[24]:=
```
(* 14.3 *) Graphics[Table[Circle[{i, j}], {i, 1, 10}, {j, 1, 10}]]
```

Out[24]=



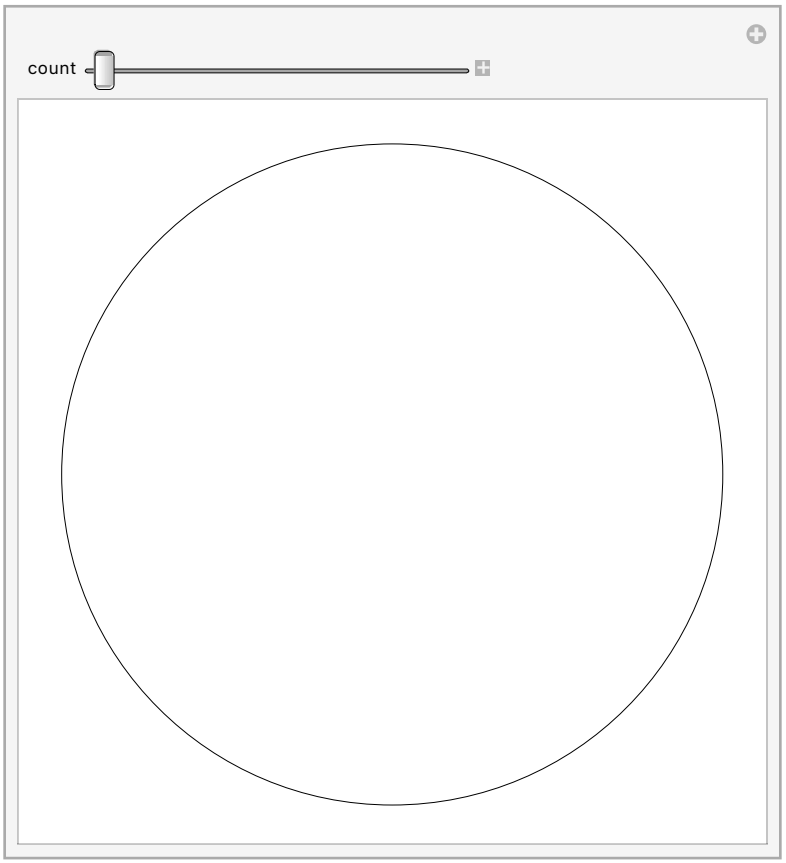
In[25]:=
```
(* 14.4 *) Graphics[Table[Point[{x, y}], {x, 1, 10}, {y, 1, 10}]]
```

Out[25]=



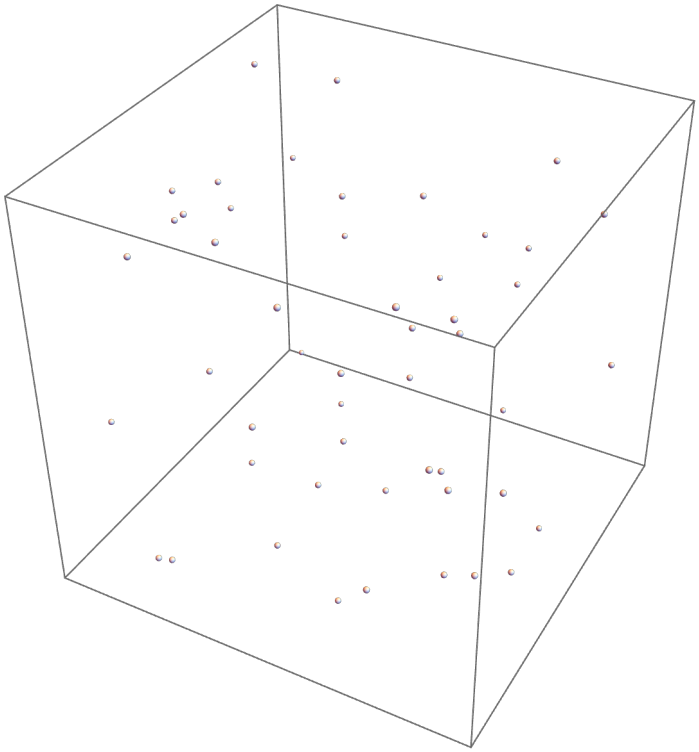
In[26]:=
```
(* 14.5 *) Manipulate[
 Graphics[Table[Circle[{0, 0}, radius], {radius, 1, count}]],
 {count, 1, 20}
]
```

Out[26]=



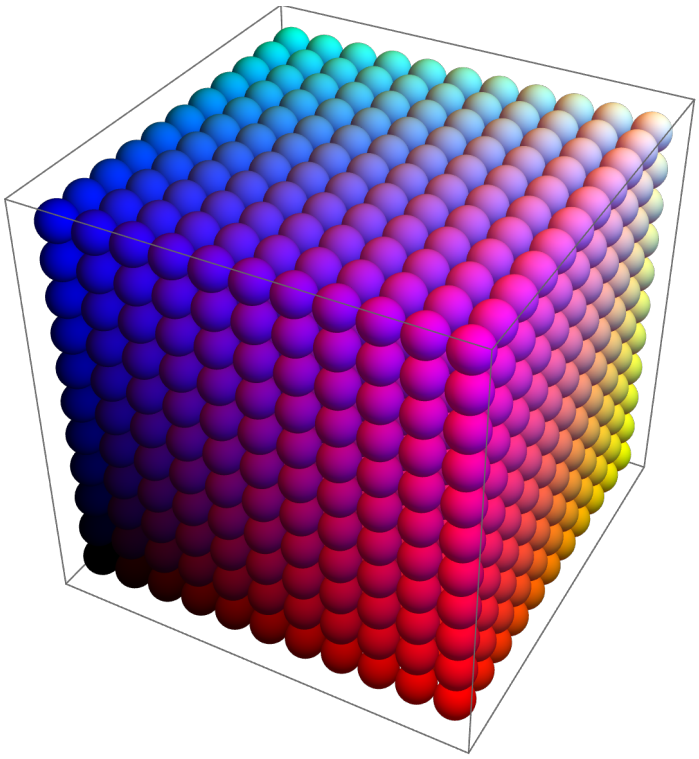
In[27]:= `(* 14.6 *) Graphics3D[Sphere[RandomInteger[150, {50, 3}]]]`

Out[27]=



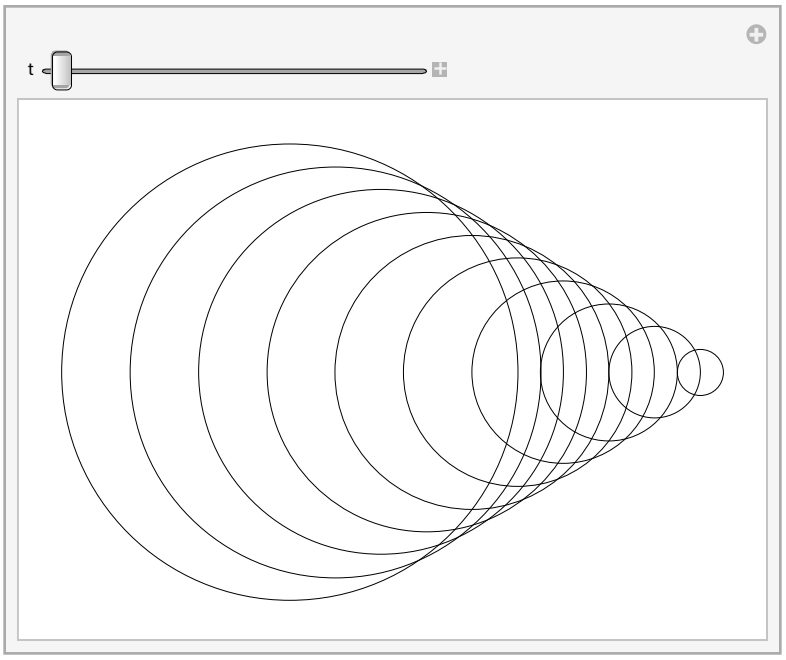
In[28]:=
```
(* 14.7 *) Graphics3D[Table[
  Style[Sphere[{x, y, z}, 1 / 2], RGBColor[x / 10, y / 10, z / 10]],
  {x, 0, 10}, {y, 0, 10}, {z, 0, 10}]]
```

Out[28]=



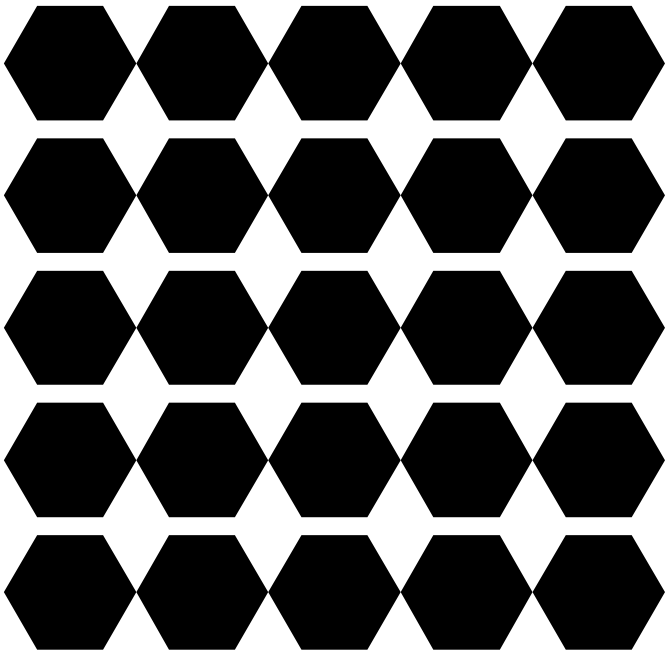
In[29]:=
```
(* 14.8 *) Manipulate[
 Graphics[
  Table[Circle[{t x, 0}, x], {x, 1, 10}]
 ],
 {t, -2, 2}
]
```

Out[29]=



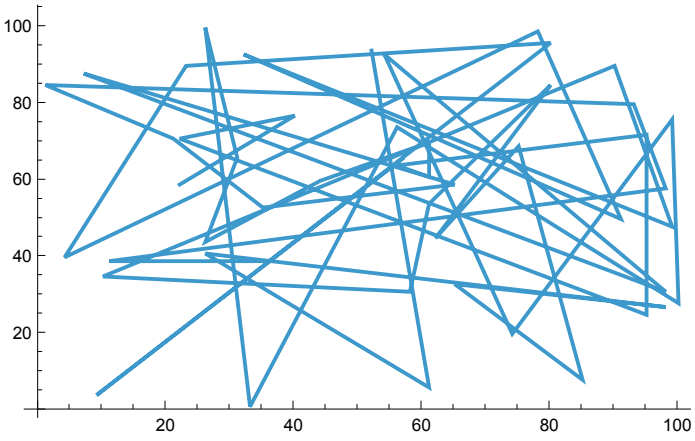
In[30]:=
```
(* 14.9 *) Graphics[
 Table[
  RegularPolygon[{x, y}, 1 / 2, 6],
  {x, 1, 5}, {y, 1, 5}]
]
```

Out[30]=



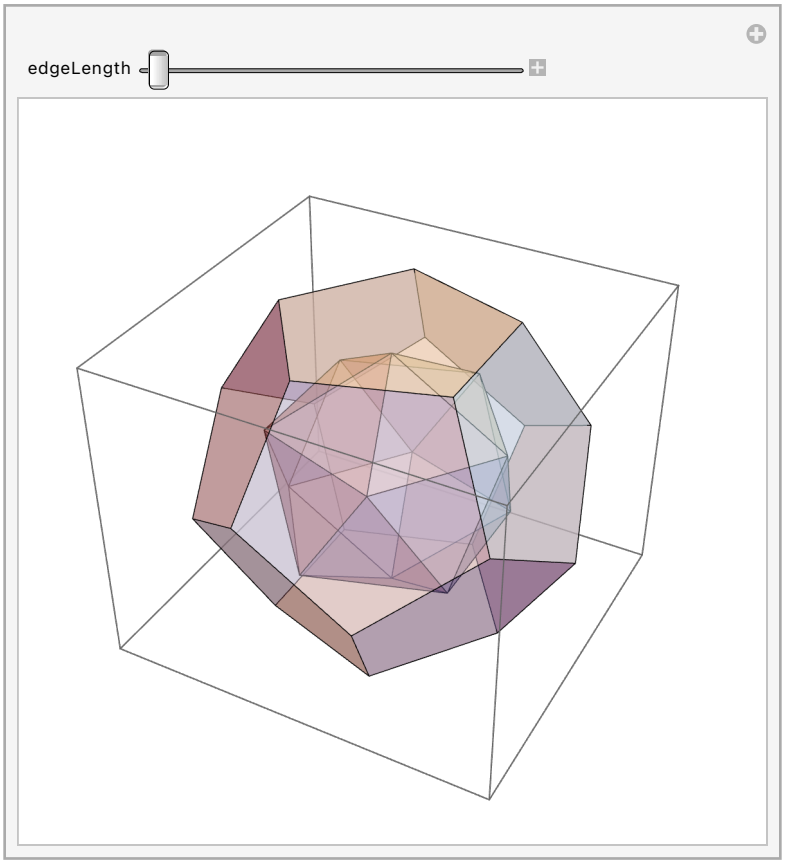
In[31]:=
```
(* 14.10 *) ListLinePlot[RandomInteger[100, {50, 2}]]
```

Out[31]=



In[32]:=
```
(* 14.11 *) Manipulate[
 Graphics3D[{
   Style[Icosahedron[{0, 0}, edgeLength], Opacity[0.5]],
   Style[Dodecahedron[{0, 0}, 1], Opacity[0.5]]
  }],
 {edgeLength, 1, 2}
]
```

Out[32]=



Exercises from *EIWL3* Section 17

In[33]:=
```
(* 17.1 *) UnitConvert[4.5 lb, "Kilograms"]
```

Out[33]=
```
2.04117 kg
```

In[34]:=
```
(* 17.2 *) UnitConvert[60.25 mi/h, "KilometersPerHour"]
```

Out[34]=
```
96.963 km/h
```

In[35]:=
```
(* 17.3 *)UnitConvert[ Eiffel Tower BUILDING ["Height"], "Miles"]
```

Out[35]=
```
0.205052 mi
```

In[36]:=
```
(* 17.4 *) Mount Everest MOUNTAIN ["Elevation"] / Eiffel Tower BUILDING ["Height"]
```

Out[36]=
```
26.8147
```

In[37]:=
```
(* 17.5 *) Earth PLANET ["Mass"] / Moon PLANETARY MOON ["Mass"]
```

Out[37]=
```
81.3
```

In[38]:=
```
(* 17.6 *) ¥ / $
```

Out[38]=
```
0.00643845
```

In[39]:=
```
(* 17.7 *) UnitConvert[ 35 oz + 0.25 sh tn + 45 lb + 9 stone , "Kilograms"]
```

Out[39]=
```
305.353 kg
```

In[40]:=
```
(* 17.8 *) UnitConvert[ planets PLANETS ["DistanceFromEarth"], "LightMinutes"]
```

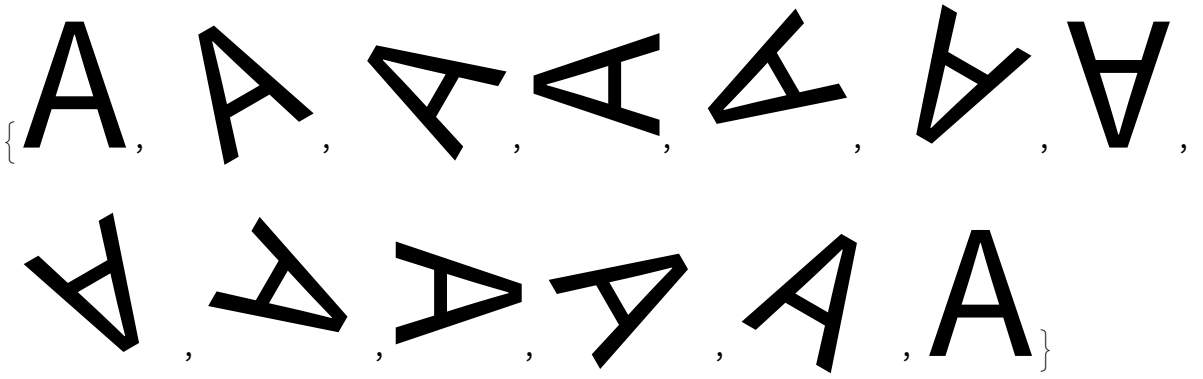
Out[40]=
```
{11.7123 light minutes , 4.09907 light minutes ,
 0. light minutes , 5.84529 light minutes , 38.2831 light minutes ,
 86.895 light minutes , 161.413 light minutes , 254.696 light minutes}
```

In[41]:=
```
(* 17.9 *) Rotate["hello", 180 °, {0, 0}]
```

Out[41]=
```
olleh
```

In[47]:=
```
(* 17.10 *) Table[
 Rotate[Style["A", 100], angle, {0, 0}],
 {angle, 0 °, 360 °, 30 °}
]
```

Out[47]=

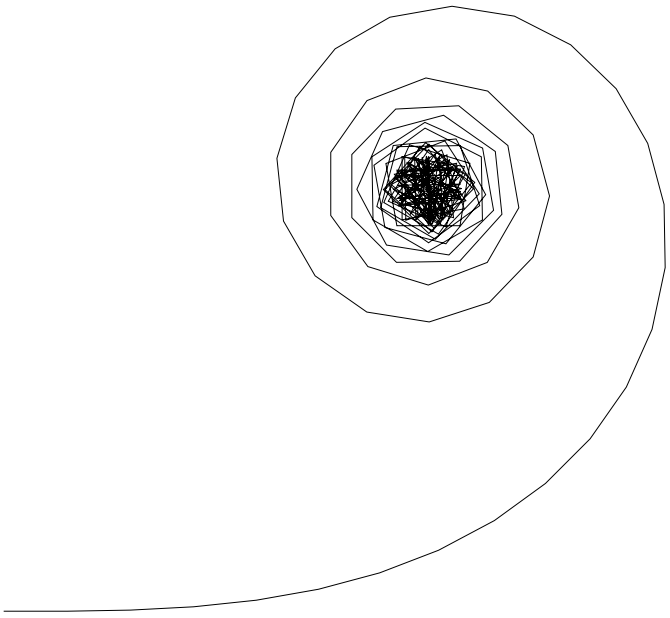


In[43]:=
```
(* 17.11 *) Manipulate[
 Rotate[ domestic cat SPECIES SPECIFICATION ["Image"], angle, {0, 0}],
 {angle, 0 °, 180 °}
]
```

Out[43]=

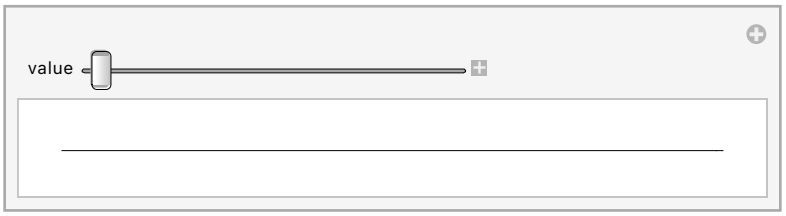
In[44]:=
```
(* 17.12 *) Graphics[Line[AnglePath[Range[0, 180] °]]]
```

Out[44]=



In[45]:=
```
(* 17.13 *) Manipulate[
 Graphics[Line[AnglePath[Table[value °, 100]]]],
 {value, 0, 360}
]
```

Out[45]=



In[46]:=
```
(* 17.14 *) Graphics[Line[AnglePath[IntegerDigits[2^10 000] 30 °]]]
```

Out[46]=