

# Brian — PS 5 — 2025-02-04 — Solution

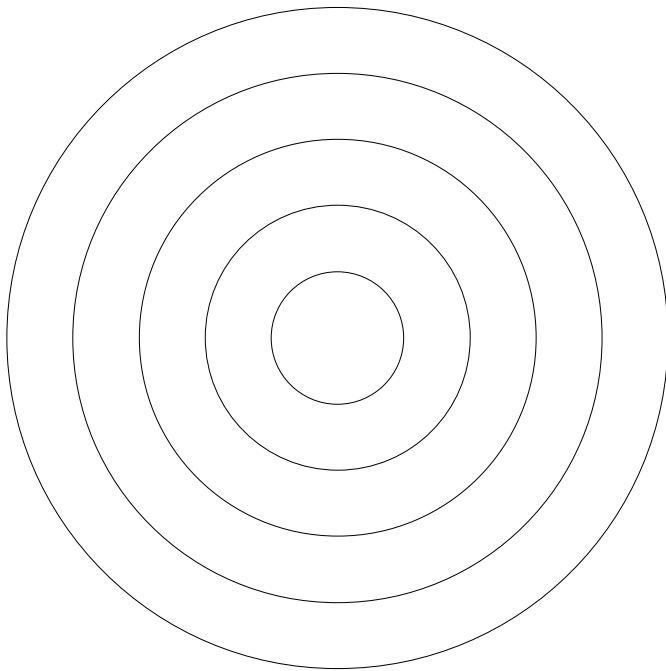
*EIWL3* Sections 14 and 17

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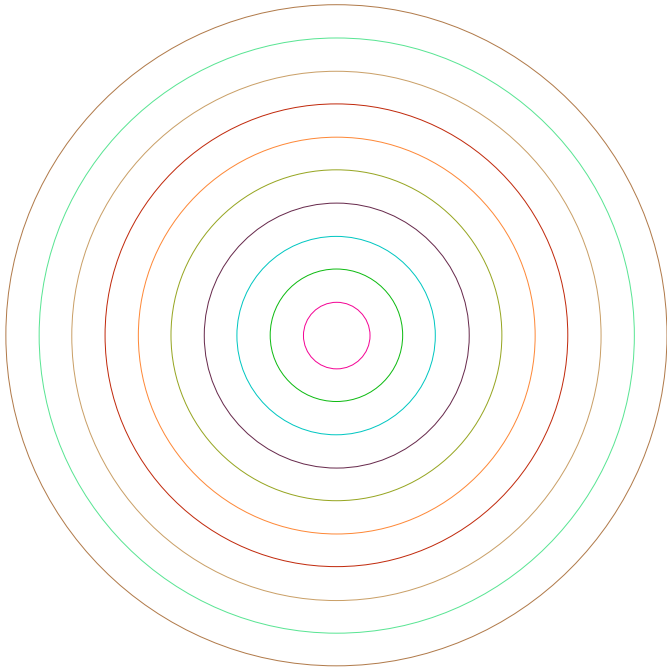
## Exercises from *EIWL3* Section 14

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

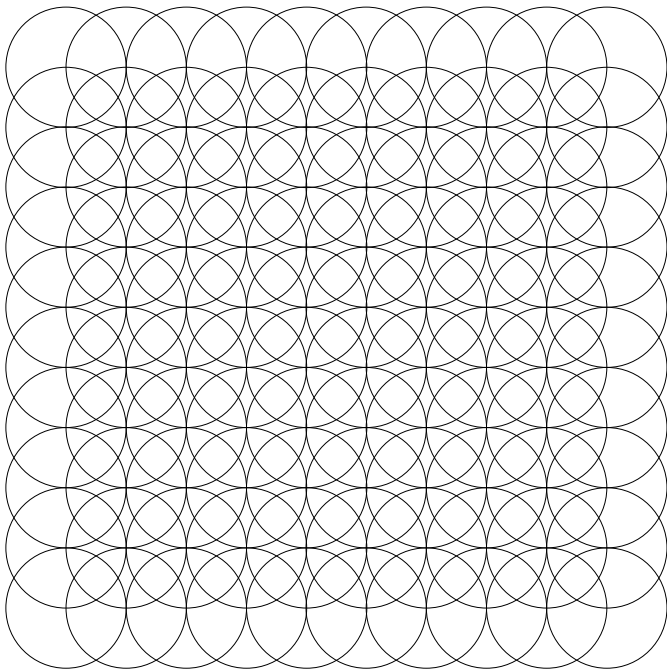
Out[22]=



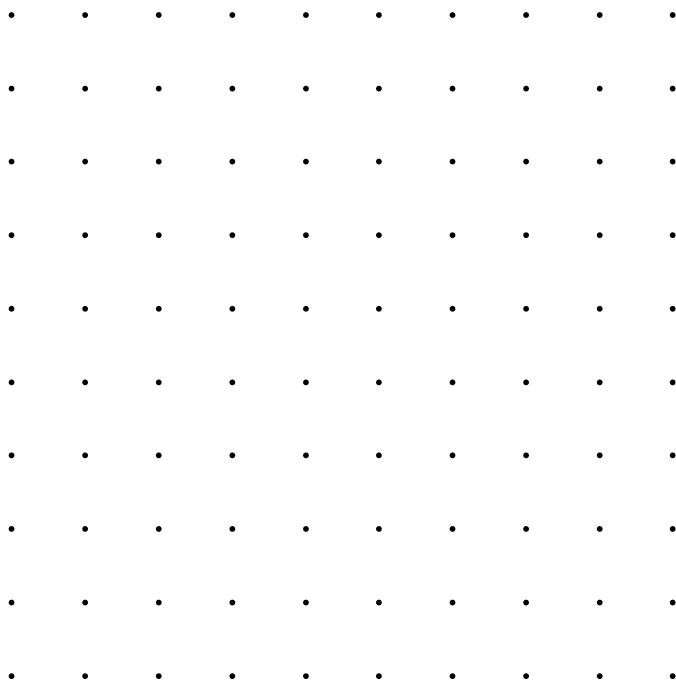
```
In[23]:= (* 14.2 *) Graphics[Table[Style[Circle[{0, 0}, r], RandomColor[]], {r, 1, 10}]]  
Out[23]=
```



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

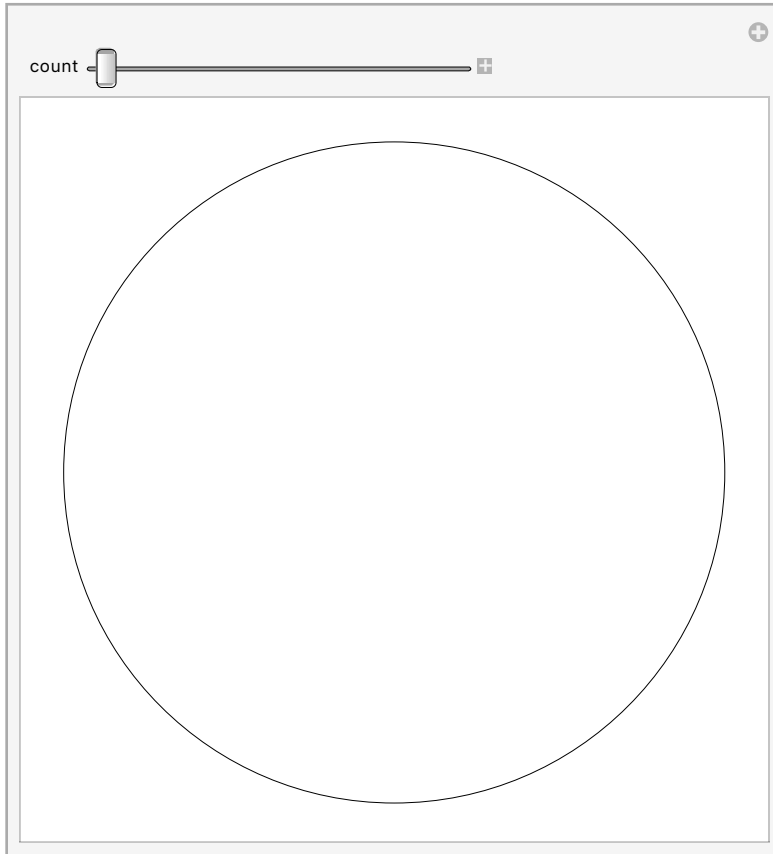


```
In[25]:= (* 14.4 *) Graphics[Table[Point[{x, y}], {x, 1, 10}, {y, 1, 10}]]  
Out[25]=
```

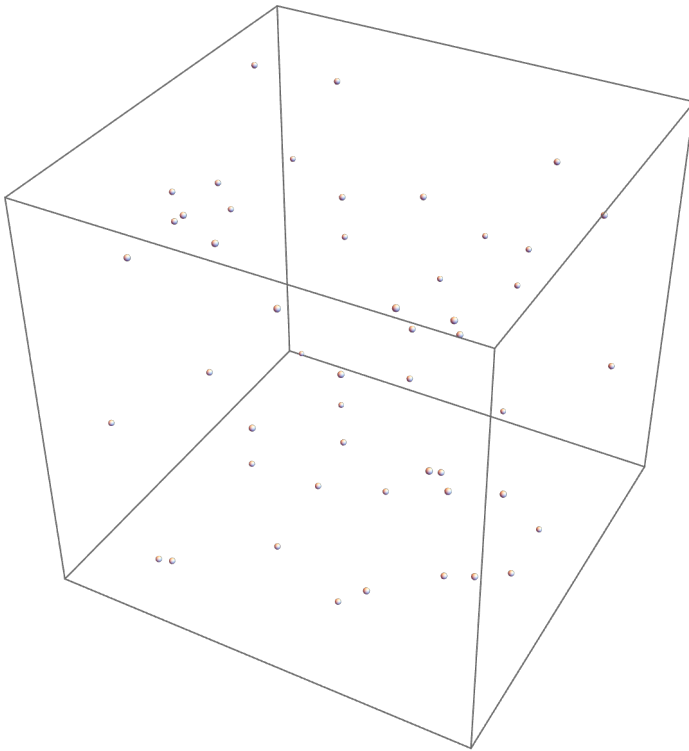


```
In[26]:= (* 14.5 *) Manipulate[  
  Graphics[Table[Circle[{0, 0}, radius], {radius, 1, count}]],  
  {count, 1, 20}  
]
```

Out[26]=

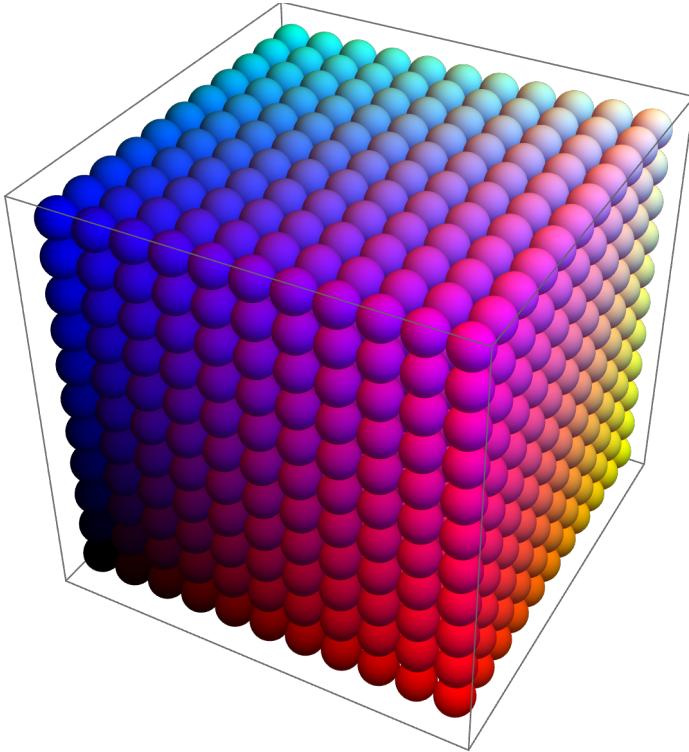


```
In[27]:= (* 14.6 *) Graphics3D[Sphere[RandomInteger[150, {50, 3}]]]  
Out[27]=
```



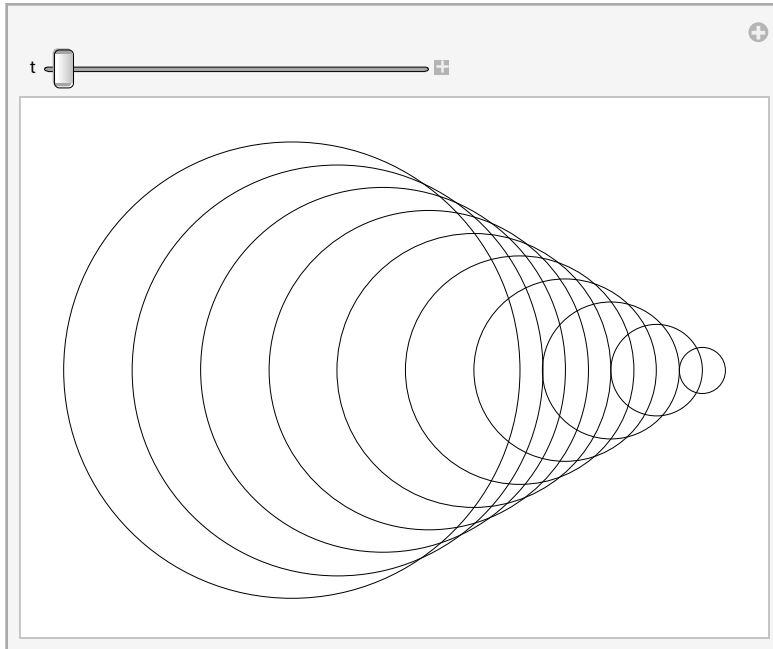
```
In[28]:= (* 14.7 *) Graphics3D[Table[  
  Style[Sphere[{x, y, z}, 1/2], RGBColor[x/10, y/10, z/10]],  
  {x, 0, 10}, {y, 0, 10}, {z, 0, 10}]]
```

Out[28]=



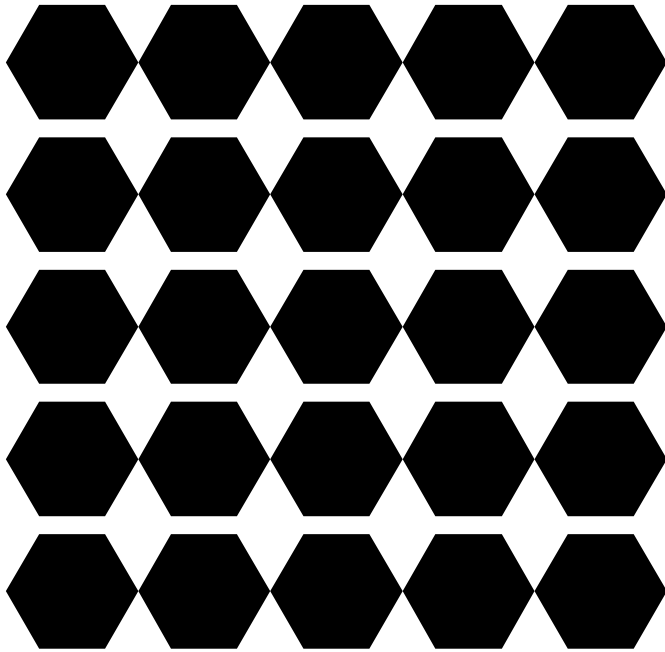
```
In[29]:= (* 14.8 *) Manipulate[  
  Graphics[  
    Table[Circle[{t x, 0}, x], {x, 1, 10}]  
  ],  
  {t, -2, 2}  
]
```

Out[29]=



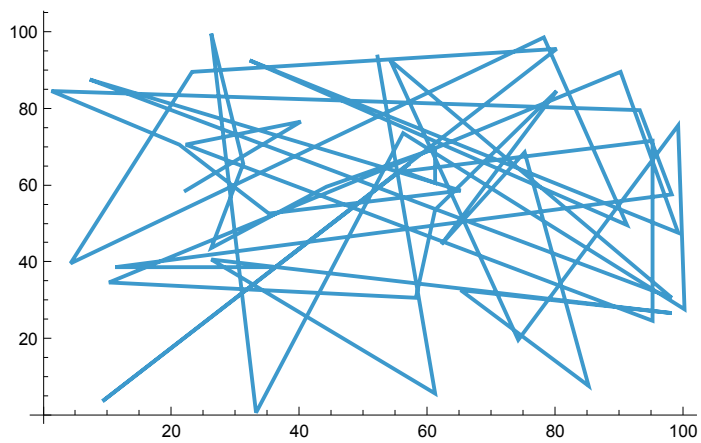
```
In[30]:= (* 14.9 *) Graphics[  
  Table[  
    RegularPolygon[{x, y}, 1/2, 6],  
    {x, 1, 5}, {y, 1, 5}]  
]
```

Out[30]=



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

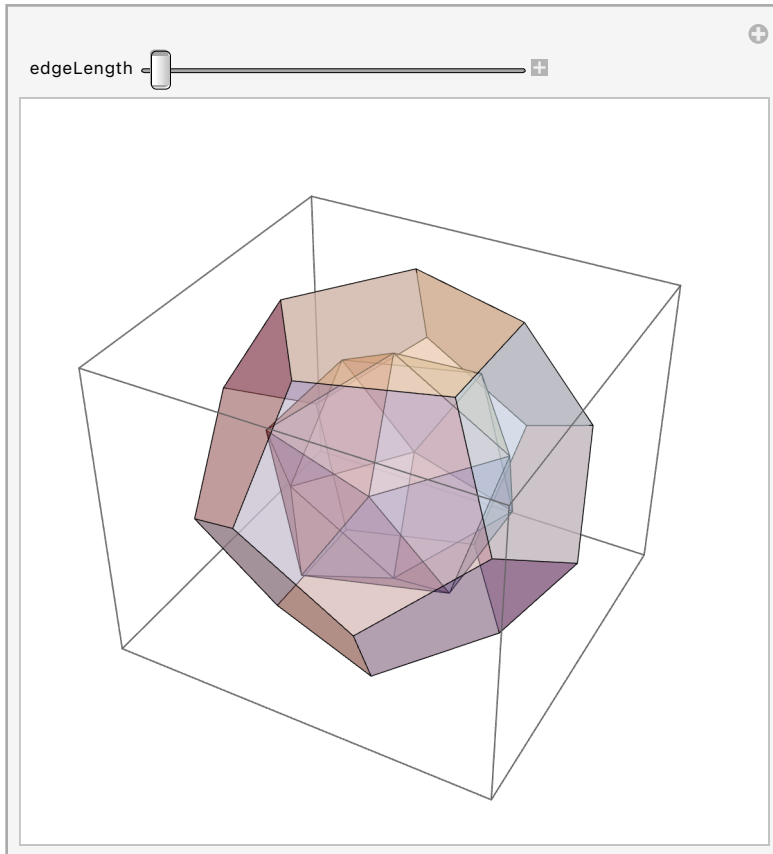
Out[31]=





```
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"]
```

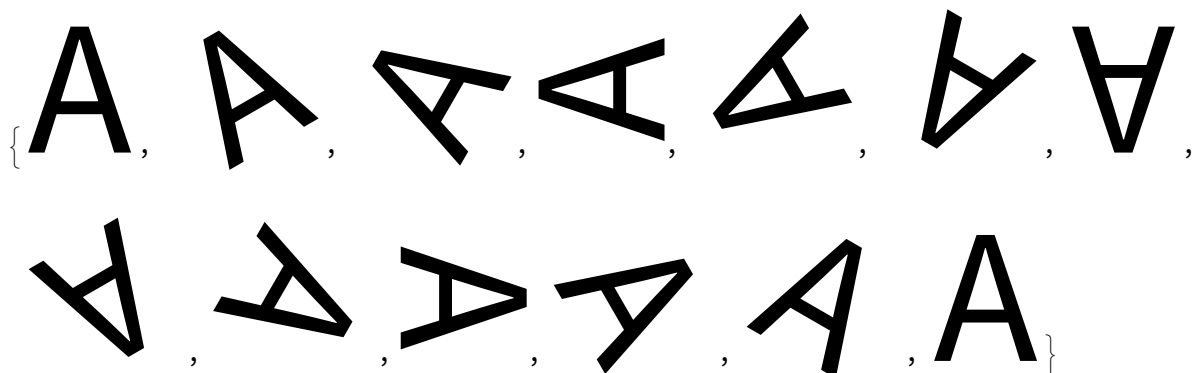
```
Out[40]= { 11.7123 light minutes, 4.09907 light minutes,
           0. light minutes, 5.84529 light minutes, 38.2831 light minutes,
           86.895 light minutes, 161.413 light minutes, 254.696 light minutes }
```

```
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]=
```

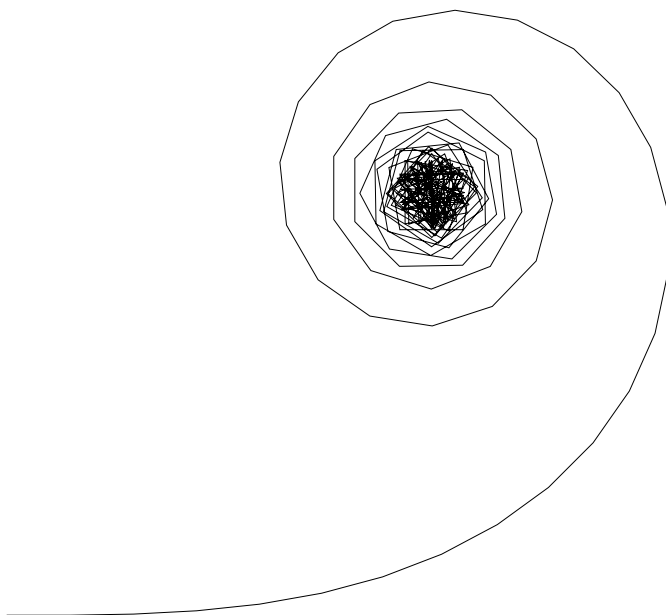


```
In[43]:= (* 17.11 *) Manipulate[
  Rotate[ domestic cat SPECIES SPECIFICATION ["Image"], angle, {0, 0}],
  {angle, 0°, 180°}
]
```

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[210000] 30 °]]]
```

Out[46]=

