Infinite tree of circles

```
EightWaySymmetry[pixelList_] := Module[{n = Length[pixelList], i, newPixelList = {}, x
    For[i = 1, i ≤ n, i++,
        {x, y} = pixelList[[i]];
        AppendTo[newPixelList, {x, y}];
        AppendTo[newPixelList, {y, x}];
        AppendTo[newPixelList, {-y, x}];
        AppendTo[newPixelList, {-x, y}];
        AppendTo[newPixelList, {-x, -y}];
        AppendTo[newPixelList, {-y, -x}];
        AppendTo[newPixelList, {y, -x}];
        AppendTo[newPixelList, {x, -y}];
    ];
    Return[newPixelList];
]
```

In[18]:=

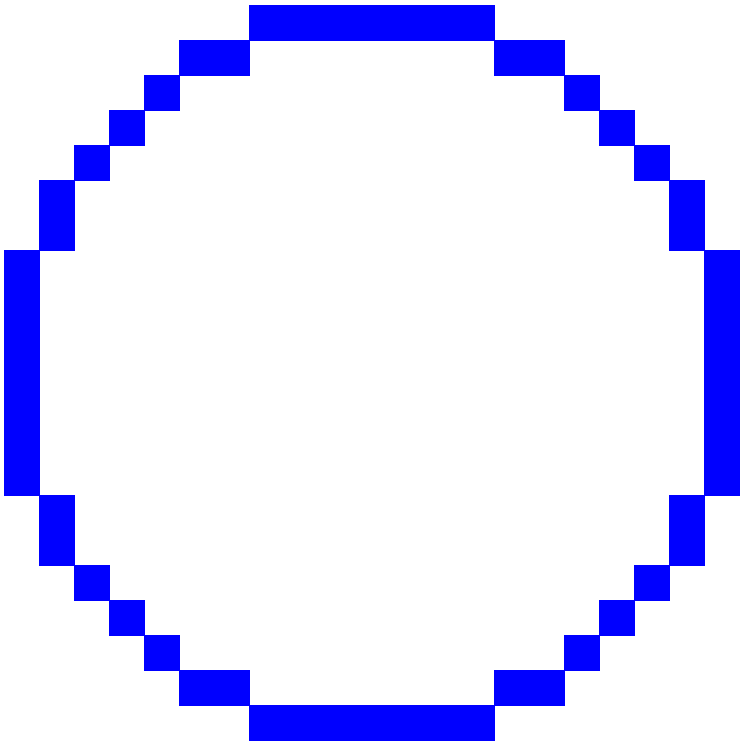
```
DrawCircle[origin_, r_]:=Module[{pixelList = {}, h, x, y, dU, dD},
    h = 1 - r;
    x = 0;
    y = r;
    AppendTo[pixelList, {x, y}];

    While[y > x,
        If[h < 0,
            dU = 2 * x + 3;
            h = h + dU;
            ,
            dD = 2 * (x - y) + 5;
            h = h + dD;
            y = y - 1;
        ];
        x = x + 1;
        AppendTo[pixelList, {x, y}];
    ];
    pixelList = EightWaySymmetry[pixelList];
    pixelList = # + origin & /@ pixelList;
    Return[pixelList];
]
```

In[89]:=

```
DrawPixel[pointList_] := Module[{},
    Return[Table[{Blue,Rectangle[pointList[[i]], pointList[[i]] + {1,1}]},{i, Length[point
]
```

In[86]:=
```
Graphics[DrawPixel[DrawCircle[{10,10}, 10]]]
```

Out[86]=



In[82]:=
```
InfiniteCircle[origin_, r_, n_] := Module[{pixelList={}},
    If[n == 0,
        Return[pixelList];
    ];
    pixelList = Join[pixelList, DrawPixel[DrawCircle[origin, r]]];
    pixelList = Join[pixelList, InfiniteCircle[{origin[[1]] + r + r/2, origin[[2]]}, r/2,
    pixelList = Join[pixelList, InfiniteCircle[{origin[[1]] - r - r/2, origin[[2]]}, r/2,
    pixelList = Join[pixelList, InfiniteCircle[{origin[[1]] , origin[[2]] - r - r/2}, r/2,
    pixelList = Join[pixelList, InfiniteCircle[{origin[[1]] , origin[[2]] + r + r/2}, r/2,
    Return[pixelList];
]
```

```
Graphics[InfiniteCircle[{0,0}, 800, 6]]
```

Out[100]=