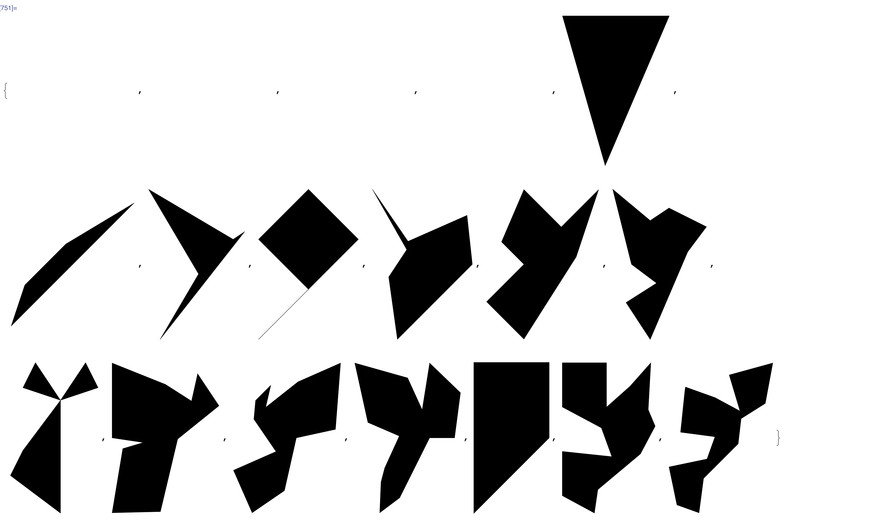
In[2]:=
```
hilbert[t_] := piecewiserecursivefractal[t, Identity, {Min[4, 1 + Floor[4 * #]]} &, {1 - 4 * # &, 4 * # - 1 &, 4 * # - 2 &, 4 - 4 * # &},
  (I * (1 - #) / 2 &, (I * #) / 2 &, (I + 1 + #) / 2 &, 1 + #1 * I / 2 &)]
```

In[1]:=
```
ClearAll[piecewiserecursivefractal];
piecewiserecursivefractal[x_, f_, which_, iters_, fns_] :=
 piecewiserecursivefractal[x, g_, which, iters, fns] = ((piecewiserecursivefractal[x, h_, which, iters, fns] := Block[{y}, y /. Solve[f[y] == h[y], y]]);
   Union @@ ({fns[[#]] /@ piecewiserecursivefractal[iters[[#]][x], Composition[f, fns[[#]]], which, iters, fns]} & /@ which[x]));
```

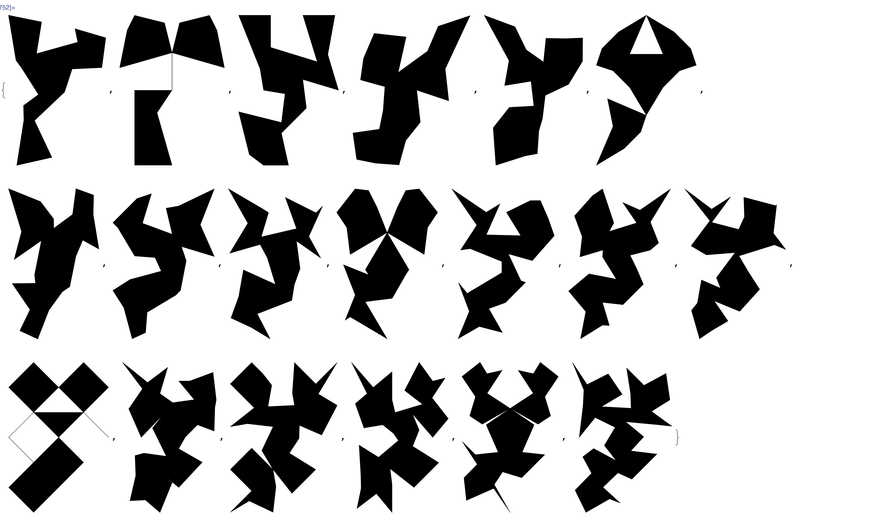
(Dialog) In[751]:=
```
Table[Graphics[Polygon@ReIm[First /@ hilbert /@ Range[1 / 6 + 1 / 2 / k, 1 / 2 - 1 / 2 / k, 1 / 3 / k]]], {k, 18}]
```

(Dialog) Out[751]=



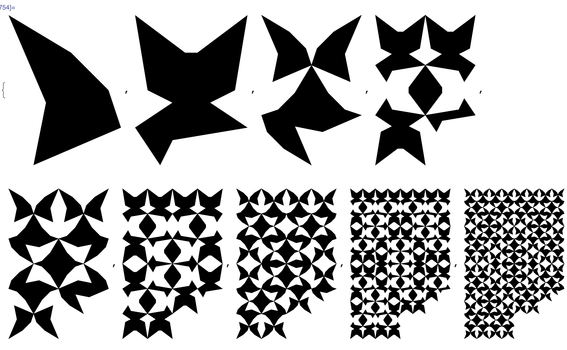
(Dialog) In[752]:=
```
Table[Graphics[Polygon@ReIm[First /@ hilbert /@ Range[1 / 6 + 1 / 2 / k, 1 / 2 - 1 / 2 / k, 1 / 3 / k]]], {k, 19, 37}]
```

(Dialog) Out[752]=



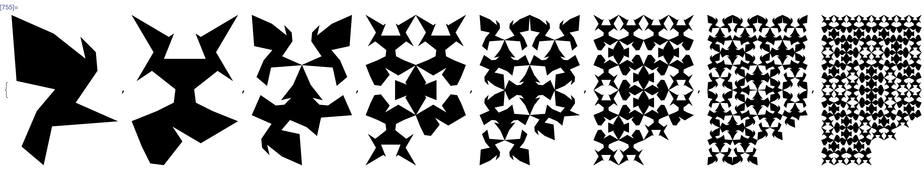
(Dialog) In[754]:=
```
Table[Graphics[Polygon@ReIm[First /@ hilbert /@ Range[1 / 6, 1 / 2, 1 / 3 / 3 / 2^k]]], {k, 9}]
```

(Dialog) Out[754]=



(Dialog) In[755]:=
```
Table[Graphics[Polygon@ReIm[First /@ hilbert /@ Range[1 / 6, 1 / 2, 1 / 3 / 7 / 2^k]]], {k, 8}]
```

(Dialog) Out[755]=

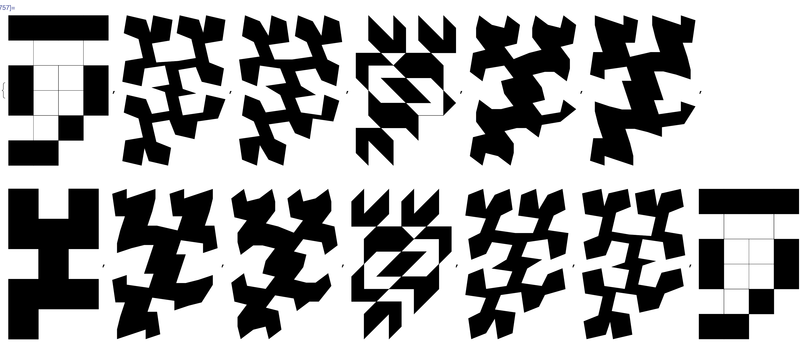


(Dialog) In[756]:=
```
1 / 6 + Table[areaPolygon[First /@ hilbert /@ Range[1 / 6, 1 / 2, 1 / 3 / 7 / 2^k]], {k, 8}]
```

(Dialog) Out[756]=
$$\left\{\frac{11}{567}, \frac{85}{5292}, \frac{11}{2268}, \frac{85}{21168}, \frac{11}{9072}, \frac{85}{84672}, \frac{11}{36288}, \frac{85}{338688}\right\}$$

(Dialog) In[757]:=
```
Table[Graphics[Polygon@ReIm[First /@ hilbert /@ Range[1 / 6 + k / 12 / 3 / 2^6, 1 / 2, 1 / 3 / 2^6]]], {k, 0, 12}]
```

(Dialog) Out[757]=



In[320]:=
```
Table[Graphics[Polygon@ReIm[First /@ hilbert /@ Range[1 / 6 + 1 / 2 / 3 / 2^k, 1 / 2, 1 / 3 / 2^k]]], {k, 12}] // tim
```

```
33.120537,12
```

Out[320]=