```
{0, 1, 0, 1}.{2/3, 2/9, 2/27, 2/81}
```

$$\frac{20}{81}$$

```
lc[b_List] := b.Table[2/3^k, {k, Length[b]}]
```

```
lc[{0, 1, 0, 1}]
```

$$\frac{20}{81}$$

```
rc[b_List] := lc[b] + 1/3^Length[b]
```

```
rc[{0, 1, 0, 1}]
```

$$\frac{7}{27}$$

```
CS[n_] := Flatten@Table[
    box[lc[bx], lc[by]],
    {bx, Tuples[{0, 1}, n]}, {by, Tuples[{0, 1}, n]}
  ]
```

```
CS[3]
```

$\{box[0, 0], box[0, \frac{2}{27}], box[0, \frac{2}{9}], box[0, \frac{8}{27}], box[0, \frac{2}{3}], box[0, \frac{20}{27}], box[0, \frac{8}{9}],$

$box[0, \frac{26}{27}], box[\frac{2}{27}, 0], box[\frac{2}{27}, \frac{2}{27}], box[\frac{2}{27}, \frac{2}{9}], box[\frac{2}{27}, \frac{8}{27}], box[\frac{2}{27}, \frac{2}{3}],$

$box[\frac{2}{27}, \frac{20}{27}], box[\frac{2}{27}, \frac{8}{9}], box[\frac{2}{27}, \frac{26}{27}], box[\frac{2}{9}, 0], box[\frac{2}{9}, \frac{2}{27}], box[\frac{2}{9}, \frac{2}{9}],$

$box[\frac{2}{9}, \frac{8}{27}], box[\frac{2}{9}, \frac{2}{3}], box[\frac{2}{9}, \frac{20}{27}], box[\frac{2}{9}, \frac{8}{9}], box[\frac{2}{9}, \frac{26}{27}], box[\frac{8}{27}, 0], box[\frac{8}{27}, \frac{2}{27}],$

$box[\frac{8}{27}, \frac{2}{9}], box[\frac{8}{27}, \frac{8}{27}], box[\frac{8}{27}, \frac{2}{3}], box[\frac{8}{27}, \frac{20}{27}], box[\frac{8}{27}, \frac{8}{9}], box[\frac{8}{27}, \frac{26}{27}],$

$box[\frac{2}{3}, 0], box[\frac{2}{3}, \frac{2}{27}], box[\frac{2}{3}, \frac{2}{9}], box[\frac{2}{3}, \frac{8}{27}], box[\frac{2}{3}, \frac{2}{3}], box[\frac{2}{3}, \frac{20}{27}], box[\frac{2}{3}, \frac{8}{9}],$

$box[\frac{2}{3}, \frac{26}{27}], box[\frac{20}{27}, 0], box[\frac{20}{27}, \frac{2}{27}], box[\frac{20}{27}, \frac{2}{9}], box[\frac{20}{27}, \frac{8}{27}], box[\frac{20}{27}, \frac{2}{3}],$

$box[\frac{20}{27}, \frac{20}{27}], box[\frac{20}{27}, \frac{8}{9}], box[\frac{20}{27}, \frac{26}{27}], box[\frac{8}{9}, 0], box[\frac{8}{9}, \frac{2}{27}], box[\frac{8}{9}, \frac{2}{9}],$

$box[\frac{8}{9}, \frac{8}{27}], box[\frac{8}{9}, \frac{2}{3}], box[\frac{8}{9}, \frac{20}{27}], box[\frac{8}{9}, \frac{8}{9}], box[\frac{8}{9}, \frac{26}{27}], box[\frac{26}{27}, 0], box[\frac{26}{27}, \frac{2}{27}],$

$box[\frac{26}{27}, \frac{2}{9}], box[\frac{26}{27}, \frac{8}{27}], box[\frac{26}{27}, \frac{2}{3}], box[\frac{26}{27}, \frac{20}{27}], box[\frac{26}{27}, \frac{8}{9}], box[\frac{26}{27}, \frac{26}{27}]\}$

```
lc[b_List] := b.Table[2/3^k, {k, Length[b]}];
CS[n_, θ_] := Flatten@Table[
    interval[Cos[θ] lc[bx] + Sin[θ] lc[by],
     Cos[θ] lc[bx] + Sin[θ] lc[by] + {1, 1}.{Cos[θ], Sin[θ]}/3^n],
    {bx, Tuples[{0, 1}, n]}, {by, Tuples[{0, 1}, n]}
  ]
```

CS[2, π / 6.]

{interval[0., 0.151781], interval[0.111111, 0.262892], interval[0.333333, 0.485114],
 interval[0.444444, 0.596225], interval[0.19245, 0.344231],
 interval[0.303561, 0.455342], interval[0.525783, 0.677564],
 interval[0.636895, 0.788675], interval[0.57735, 0.729131], interval[0.688461, 0.840242],
 interval[0.910684, 1.06246], interval[1.02179, 1.17358], interval[0.7698, 0.921581],
 interval[0.880911, 1.03269], interval[1.10313, 1.25491], interval[1.21424, 1.36603]}

? Rectangle

Rectangle[{x_{min}, y_{min}}, {x_{max}, y_{max}}] represents
    an axis-aligned filled rectangle from {x_{min}, y_{min}} to {x_{max}, y_{max}}.
Rectangle[{x_{min}, y_{min}}] corresponds to a unit square with its
    bottom-left corner at {x_{min}, y_{min}}. $\gg$

Manipulate[
 M = {{Cos[θ], Sin[θ]}, {-Sin[θ], Cos[θ]}};
 Graphics[**CS**[5] /. **box**[$x\_$, $y\_$] $\mapsto$ Rectangle[M.{x, y}, M.$(1 / 3^5 + \{x, y\})$]],
 {θ, 0, π / 2}
]