

fractals.py

```
448 class Maps2DRect(MovingCameraScene):
449     def construct(self):
450         r1 = Polygon([0,0,0],[1,0,0], [1,1,0], [0,1,0]).set_color(WHITE)
451         self.camera.frame.shift(UP*5+ RIGHT*4).scale(1.5)
452         gNow = VGroup()
453         gPrev = VGroup(r1)
454         self.add(r1)
455         self.wait()
456         fac = 1/10
457         maxIter = 4
458
459         scales = [1/4, 2/3, 3/4]
460         xshifts = [1, -1, 4]
461         yshifts = [2, 3, 3]
462
463         for i in range(maxIter):
464             gNow = VGroup()
465             for t in gPrev:
466                 rv = t.get_vertices()
467
468                 sideLen = np.linalg.norm(rv[0]- rv[1])
469                 print(sideLen)
470
471                 r2 = t.copy().scale(scales[0]).shift(sideLen*xshifts[0]*RIGHT +
sideLen*yshifts[0]*UP).set_color(BLUE)
472                 r3 = t.copy().scale(scales[1]).shift(sideLen*xshifts[1]*RIGHT+
sideLen*yshifts[1]*UP).set_color(GREEN)
473                 r4 = t.copy().scale(scales[2]).shift(sideLen*xshifts[2]*RIGHT +
sideLen*xshifts[2]*UP).set_color(YELLOW_C)
474
475                 gNow.add(r2, r3, r4)
476                 #gNow.add(r2)
477
478             self.add(gNow)
479             self.wait()
480             gPrev = gNow
```