

Fractal geometry HW

Due by email Wednesday, September 2

Note that I've already assigned problem 11 from chapter 2 of the text. Due to some bizarre feature of $\text{T}_{\text{E}}\text{X}$ that I am unaware of, there are actually two problem 11s. They're both good, so let's just assign them both. Let's call this exercise 13.

13. Consider the following iterated function system.

```
t = Pi / 6;  
f1 = {{Cos[t], 0}, {0, -Cos[t]}.RotationMatrix[-t], {0, 0}};  
f2 = {{Sin[t], 0}, {0, -Sin[t]}.RotationMatrix[Pi / 2 - t],  
      {Cos[t]^2, Sin[t] Cos[t]}};  
IFS = {f1, f2};
```

- What are the contraction ratios of the functions f_1 and f_2 ?
- Use the `ShowIFS` command to approximate the attractor using both an integer second argument (indicating a level) and a small, positive, real second argument (indicating a tolerance).
- Can you identify the attractor?