

# Set

Topology is difficult, you told me. Algebra is confusing. Groups are strange beasts, even the finite ones. But not sets. Sets are simple.

You'd seen the groups, of course - you came back covered in twigs and mysterious scratches, rambling about normality and centralisers and free generators. You tried to venture among the topological spaces but you were scared away by one-point compactification and strange quotients and clopenness, howls in the distance which sent you running. So you came to me, and told me we would look at sets, because sets are easy and you wanted to show me around.

You promised it would be safe. Sets are simple, after all.

First, there was nothing. What could be simpler? Then the first shoots poked through the grass, and you told me not to worry about the infinite line, told me it shouldn't bother me, that they were all the same, really. I listened, though I shouldn't have, and we kept going. The little stems turned into spindly saplings, then small trees with flaking bark, and as you ran ahead I saw them start to tower above you. You reached each one twice as fast as the last; I struggled to keep up, I was so scared of losing you I didn't turn back until the light began to fade as the redwoods reached monstrous heights, blocking out the sun. Size became so meaningless now, as I realised I could no longer tell which way I came. Beneath my feet great networks of mycelia spanned the soil, mapping nutrients from each tree to the next, a web of relations of which I was blissfully unaware.

We came upon a great felled beast, its rings too numerous to count, but it wasn't enough for you. You told me you wanted to see a tree with twice the rings, three times, as many times as there were rings, and then as many rings as there were collections of rings themselves. You told me you wanted to see the tree with rings which enumerated every number you could count to, every collection of any number of these, and every real number between them. I tried to follow you, I tried to keep up, you doubled your speed, then tripled it, I had almost lost you when I stumbled, tripped over the winding roots that snaked beneath my feet (I realised far too late that they could have led me home, that each monster I encountered pointed back, back to the first innocent little stem). I hit the ground hard, and everything went dark.

When I came around, the forest looked different somehow. I couldn't even see the canopy, mist swirled high above my head and monstrous trunks disappeared into its folds. And silence, deathly silence saturated the air; when the trees weren't much bigger than the saplings we had left behind, there was birdsong and the rustling of wildlife, and even after they stole the sun, I heard distant howls and snapping twigs. They scared me then, but they were a comforting companion compared to this, and I silently begged for their return. I looked for signs that you had been here, but nothing betrayed your presence.

I found what you were looking for though, I found the rings that counted every real number, and the ones that counted all your collections of naturals, but I couldn't tell if they were different, I'm sorry to say. I tried to stumble back, but I think I just went further; the nest of roots was too complicated to untangle and I couldn't see in which direction heights grew or waned. I counted the steps I took until I reached every number I could count, then counted the distances I travelled down to infinite divisions, and when I had finished that and made no progress, I finally collapsed from exhaustion.

You told me later that you were there. You told me you went further. That when you tried to find the tree whose rings enumerated every other tree, the trees became so large that they couldn't be called trees anymore. You said they turned into great stone mountains before your very eyes, that the rings were striations that connected at the end of the ordinals, at the end of time itself. You wouldn't tell me what you meant by that. And you never told me how you escaped, or even how I did.

You left the groups alone after that. And the topological spaces, the monoids, the modules, you avoided them all. Too many people disappeared into their depths, at least as dense as the forest we had seen. And the categories, above all, towered from the very beginning; they were beasts you once boasted you could slay, now you keep your distance, like me.

I still catch you staring off at the sets though. You pretend you've had enough, that you're not crazy enough to venture there again, but I know you still think there's an end, or another side. I know you still want to find out what comes next. And I worry that next time, the forest won't be so kind.

I think we were very, very lucky.