

# Exercise Session 1: Introduction – what is graph theory? · 1MA020

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We begin the course by motivating in general what graph theory is, and the different kinds of thing it can be used to study. We also use these examples in our exercises to start to build up our graph-theoretical vocabulary.

What is graph theory? It is, unsurprisingly, the study of graphs. Not graphs as in “we plot the function  $x^2 + 3x + 2$ ”, but graphs as in things that look like this:

simple graph that can be drawn on the blackboard

A graph consists, as indicated in the figure, of *vertices* connected by *edges*.

**Exercise 1.** a figure of two isomorphic graphs with different labels – exercise: “figure out a way to describe why these are really the same”