# M1C03 Lecture $\overline{33}$

Jeremy Lane

Dec 2, 2021

## Announcement(s)

- Assignment 5 due Wednesday
- 2 Exam review in class on Wednesday

### Overview

Reference: Lakins, Section 9.1, 9.2, 9.3.

## $\sqrt{2}$ is a real number

#### Theorem

There exists a positive real number that solves the equation

$$x^2 = 2$$
.

## $\sqrt{2}$ is irrational

#### Theorem

 $\sqrt{2}$  is not a rational number.

 $\ensuremath{\mathbb{Q}}$  does not satisfy the completeness axiom

## Archimedean property

#### Theorem

For all real numbers a,b, 0 < a < b, there exists a positive integer n such that na > b.

## Archimedean property

## Archimedean property