Sets & Functions

P.5.1 in Review:

3 proofs

1st Ethan Arpad

Reflect: the simplest uses only algebra & many cases

2nd Notes

$b \to |b|$ $c \to |c|$

uses inequality finds simpler bigger quadratic that leads to $\times$

no cases

3rd Ben

finds simpler bigger quadratic $c \to |c|$

uses sols of quadtr. eg.

If is always good to look for a proof from BASIC PRINCIPLES! (minimize on the Background Knowledge)

A General Remark about Math Structure:

Distinguish between

Definitions and Propositions

$2 = 1+1$ by definition	$2+2=4$ is a proposition

see the end of this notebook

Sets

$\{0,1\}$ **The set** which consists of two elements 0 and 1

$\mathbb{Z}$ the set of all integers $= \{\dots, -2, -1, 0, 1, 2, \dots\}$

$\mathbb{N} = \{1, 2, \dots\}$ (CS they include 0)

$\mathbb{R}$ the set of all real numbers

intervals subsets of $\mathbb{R}$

$P(x)$: $0 \le x \le 1$ — negate → denial of clarity

$\neg\big((0 \le x) \wedge (x \le 1)\big) \iff (x < 0) \vee (x > 1)$

two equals one plus one
is a definition,
while
two plus two equals four
is a proposition