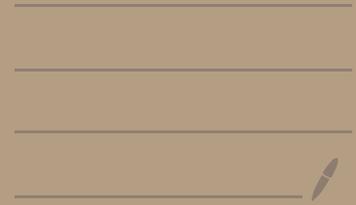


# Sets & Functions

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P. 5.1 in

Review :

3 proofs

1st Ethan  
Arpad

2nd Notes

3rd Ben

Reflect: the  
simplest  
uses only algebra  
& many cases

$$b \rightarrow |b| \quad c \rightarrow |c|$$

uses inequality  
finds simpler bigger  
quadratic that  
leads to  $x$

finds simpler bigger  
quadratic

$$c \rightarrow |c|$$

uses sols of quadr.: eg.

no cases

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

# A General Remark about Math Structure:

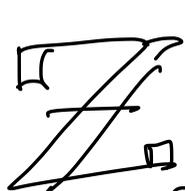
Distinguish between  
Definitions and Propositions

$2 = 1 + 1$  by definition  
*see the end of this notebook*

$2 + 2 = 4$   
is a proposition

Sets  $\{0, 1\}$

The set which consists of two elements 0 and 1



the set of all integers

$\mathbb{Z} = \{\dots, -2, -1, 0, 1, 2, \dots\}$

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

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

intervals subsets of  $\mathbb{R}$

Pr:  $0 \leq x \leq 1$

negate

denial of clarity

$$\neg \left( (0 \leq x) \wedge (x \leq 1) \right) \Leftrightarrow$$

$$(x < 0) \vee (x > 1)$$

two equals one plus one  
is a definition,  
while

two plus two equals four  
is a proposition