Class 1

Chapter 1.1

Negation does not mean opposite.

Class 2

Logical operators

a negation of $\oplus$ is equivalent to $\leftrightarrow$

But is equivalent to and

Class Notes

Section 1.5

Proof for uncountability of $\mathbb{R}$

Suppose $B \subset \mathbb{R}$ where $B = [0, 1]$

Then Suppose B is countable

$$a_1 = 0.d_{11}\ d_{12}\ d_{13}\ \cdots\ d_{1i}$$
$$a_2 = 0.d_{21}\ d_{22}\ d_{23}\ \cdots\ d_{2i}$$
$$a_3 = 0.d_{31}\ d_{32}\ d_{33}\ \cdots\ d_{3i}$$
$$\vdots$$
$$a_i = 0.d_{i1}\ d_{i2}\ d_{i3}\ \ddots\ d_{ii}$$

Create $b = d_{11}\ d_{22}\ d_{33}\ \cdots\ d_{ii}$
this is not on the list, since we can always keep polling more terms out. B is uncountable and since

$B \subset \mathbb{R}$
$\therefore$ $\mathbb{R}$ is uncountable.

Solving a recurring relation

$a_n = 2(-4)^n + 3 \quad a_n = -3a_{n-1} + a_{n-2}$?

Plug in

Lef side $\quad a_n = 2(-4)^n + 3$

Rgh side $\quad -3a_{n-1} + a_{n-2} = -3[2(-4)^{n-1} + 3] + [2(-4)^{n-2} + 3]$

$= -6(-4)^{n-1} + 8[(-4)^{n-1} \cdot (-4)^{-1}) + 3$

$= -8(-4)^{n-1} + 3$

$= 2(-4)^n + 3$

$a_0 = 2^1 (-1) - 1.3$

$a_1 = (2a_0 - 3) - 3$

$5^2 +$

1 2 3 4 5

1, 3, 7, 15, 31

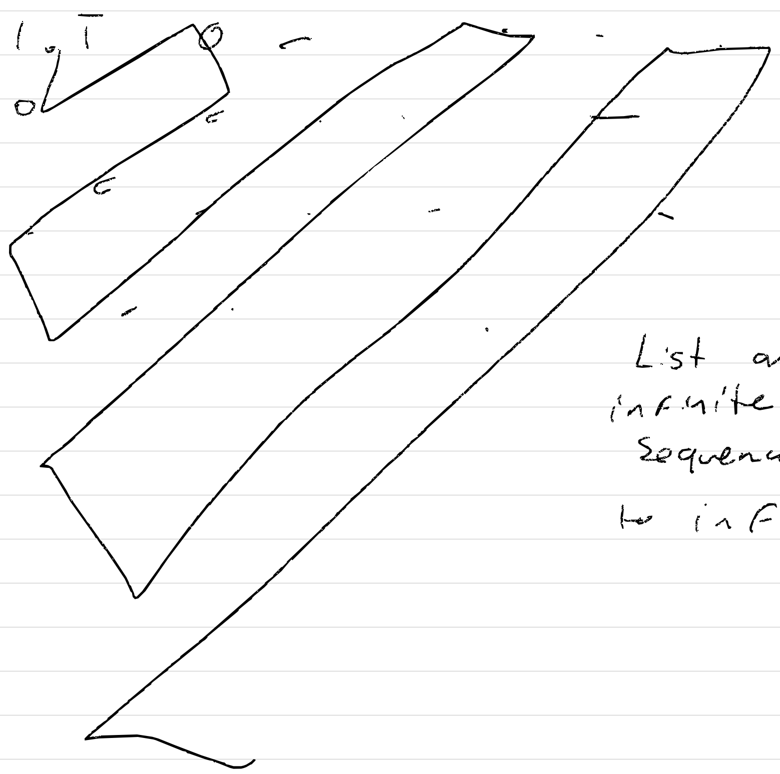
$2(1)+1$

$2(3)+1$

$4^2 - 1$

$2^2 - 1 \quad 3^2 - 2$

Zig Zag Method



List an infinite sequence to inf Zig Zag

Sec 2.5

11

b) $A = [1, 2] \cup \mathbb{Z}^+$
$B = [2, 3] \cup \mathbb{Z}^+$

$A \cap B = \mathbb{Z}^+$

c) $A = [1, 2]$
$B = [1, 3]$

$A \cap B = [1, 2]$

Sum or all integers in a list!
input $a_1, a_2 \quad \dots \quad \mathbb{Z}$
out sum $\Sigma \dots$

anette pedrotti
p

6.3 #41

AAA-000

$26 \cdot 25 \cdot 24$

$26P3 + 10P3 =$

6.3 # 11

[1111, 000000] 2^6