

3A302 (A) 제 10주 Recursion

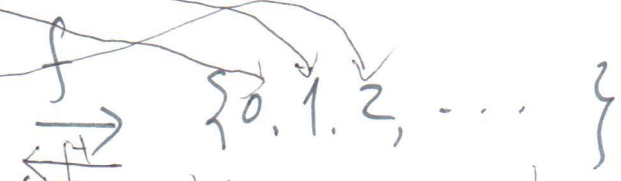
Chap 4

자연수 $N = \{0, 1, 2, \dots\}$

유리수 $Q = \{(i, j) \in N_0 \times N_1\}$

$|N|^1 = N$
 $|Q| = |N|^2 = N^2$

D	1	2	...
1	(0,1) (1,1) (2,1)		
2	(0,2) (1,2) (2,2)		
3	(0,3) (1,3) (2,3)		



$(0,1), (1,1), (0,2), (2,1), (1,2), (0,3), (1,3), (2,3), \dots$

0 1 2 3 4 5 6

순서대로
 ↓
 sum first
 lexicographic order
 (사정(3))
 in reverse order

$f: N_0 \times N_1 \rightarrow N_0$
 $f^{-1}: N_0 \rightarrow N_0 \times N_1$

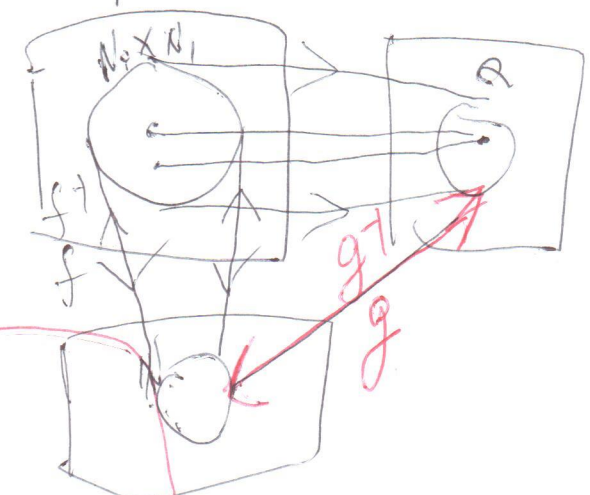
Quiz #1 (수업의 일부분)

각각 유리수 onto 하는 수들의 집합

$|N_0 \times N_1| \stackrel{?}{=} Q$ $|N_0 \times N_1| = |N_0| = |N_1| = |N_A| \dots$

$\therefore |Q| = |N|$

자연유리수



$|N_0| = |N_k|$ (for $k \in \mathbb{Z}$)
 $= |N^2| = \dots = |N|$
 polynomial growth

$2^N, 3^N, \dots, k^N, \dots, k^{1000}$

Euclidian algorithm : GCD : 최대 공약수