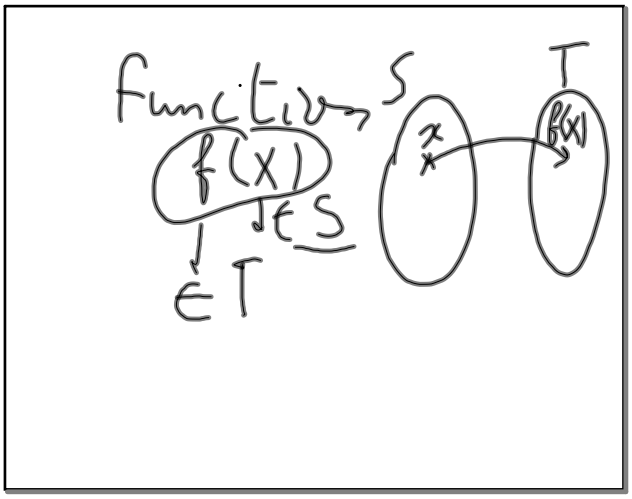
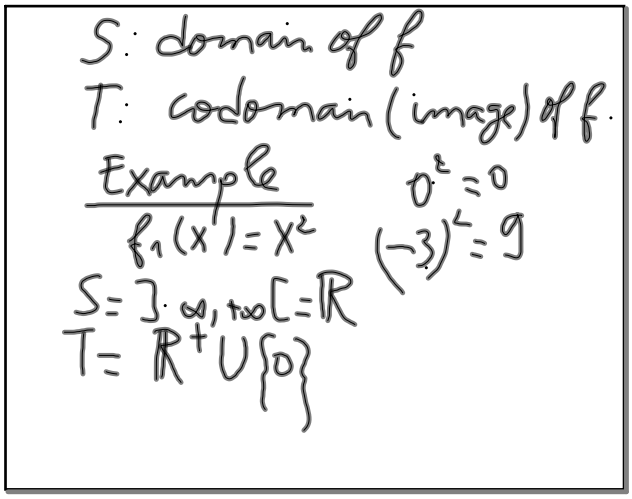
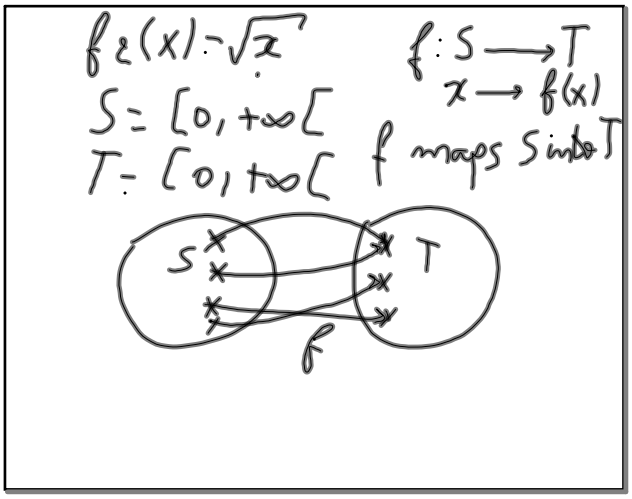


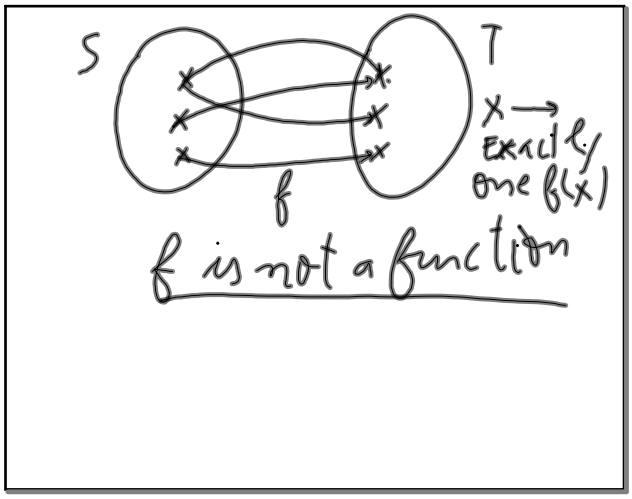
م 25-01:01 نابعش



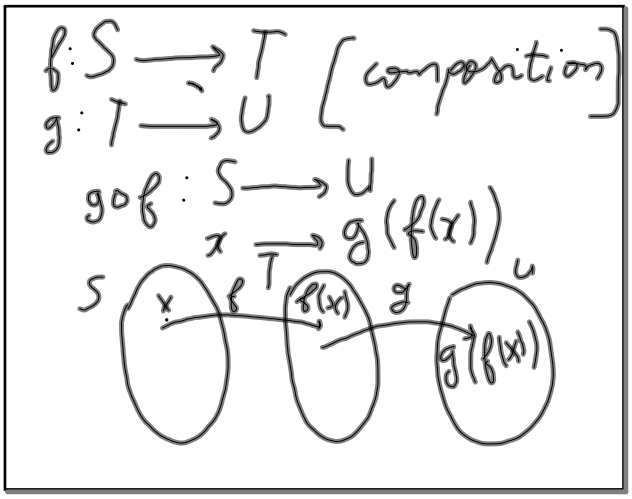
م 25-01:17 نابعش



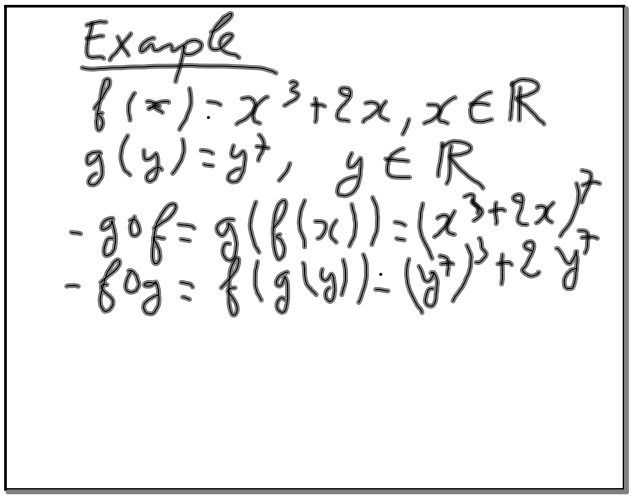
م 25-01:21 نابعش



م 25-01:26 نابعش



م 25-01:29 نابعش



م 25-01:32 نابعش

f, g, h

$(h \circ g) \circ f = h \circ (g \circ f)$

Example

$f(x) = x^4$

$g(y) = \sqrt{y^2+1}$

$h(z) = z^2 + 72$

م 25-01:39 نابعش

$f(x) = x^4, \quad g(y) = \sqrt{y^2+1}$

$h(z) = z^2 + 72$

$h \circ (g \circ f) = h(g(f(x)))$

$= h\left(\sqrt{x^8+1}\right)$

$= h\left(\sqrt{x^8+1}\right)$

$h \circ (g \circ f) = x^8 + 1 + 72 = x^8 + 73$

م 25-01:48 نابعش

$(h \circ g) \circ f =$ $h(z) = z^2 + 72$, $g(y) = \sqrt{y^2+1}$

$h(g(y)) = \left(\sqrt{y^2+1}\right)^2 + 72$

$= y^2 + 73$

$(y^2 + 73) \circ f = \quad / \; y = f(x)$

$(x^4)^2 + 73 = x^8 + 73$

م 25-01:52 نابعش

$f_1(x), f_2(x)$

$f_1(x) + f_2(x) = f_2(x) + f_1(x)$

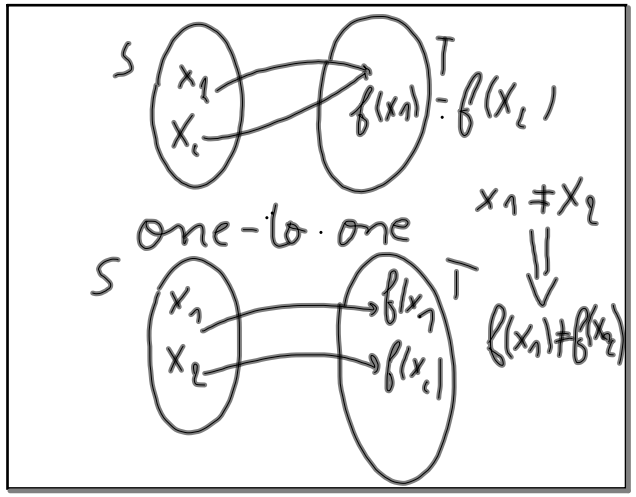
$f_1(x)\, f_2(x) = f_2(x)\, f_1(x)$

$\forall x \cdot \exists$ exactly one $f(x)$

م 25-01:59 نابعش

A function $f: S \longrightarrow T$ is called one-to-one if distinct elements in S have distinct images in T under f

م 25-02:05 نابعش



م 25-02:08 نابعش

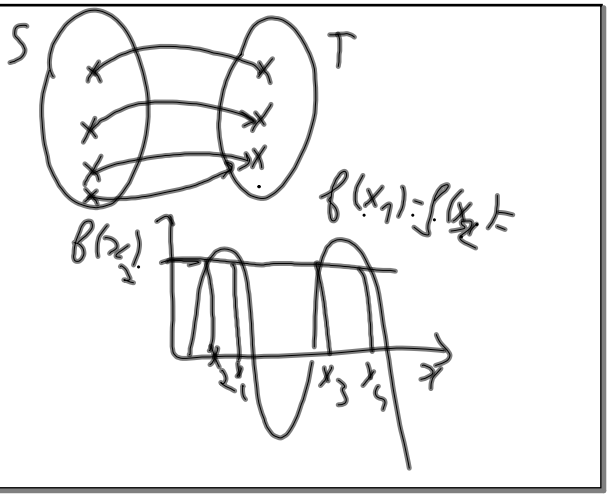
if $x_1, x_2 \in S$ and $x_1 \neq x_2$
then $f(x_1) \neq f(x_2)$

if $x_1, x_2 \in S$ and $f(x_1) = f(x_2)$
then $x_1 = x_2$

م 25-02:11 ناب عش

onto
$f : S \longrightarrow T$
f maps onto T
for each $y \in T$, there is
at least one $x \in S$

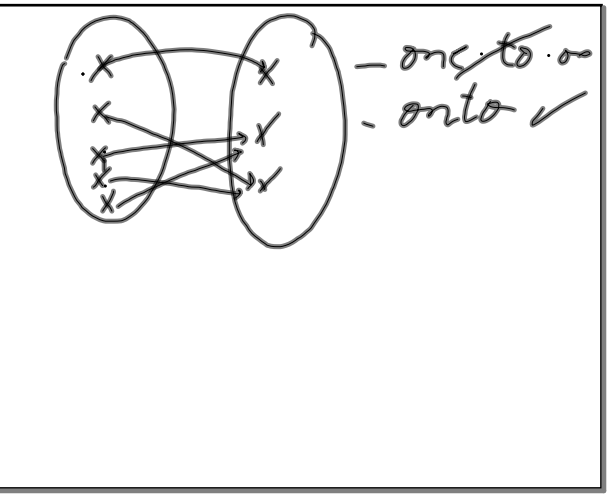
م 25-02:13 ناب عش



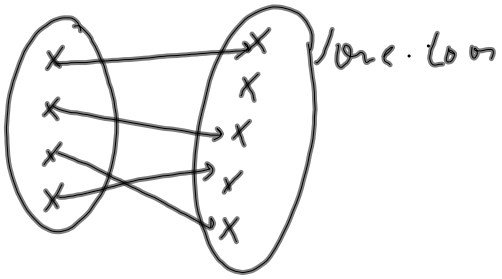
م 25-02:14 ناب عش

A function $f : S \longrightarrow T$
is called
[one-to-one correspondance
iff for each $y \in T$, there
is exactly one $x \in S$
{one-to-one
{onto

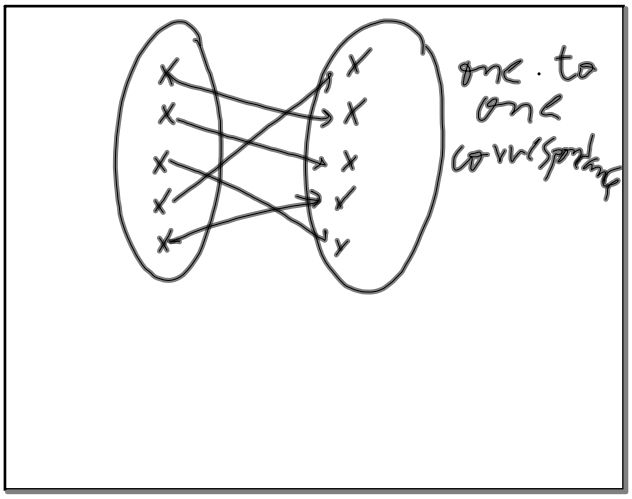
م 25-02:20 ناب عش



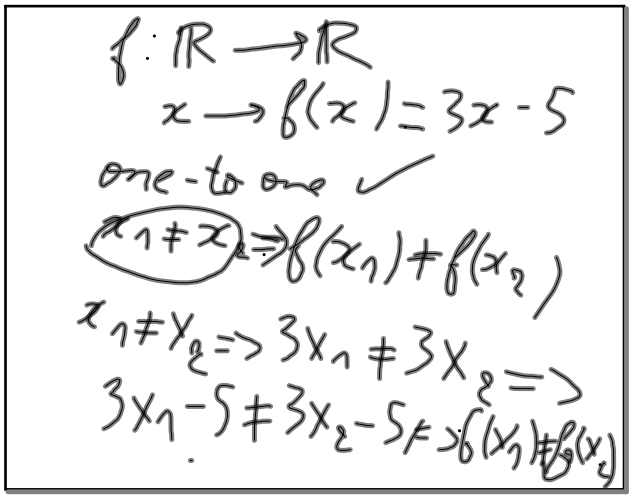
م 25-02:23 ناب عش



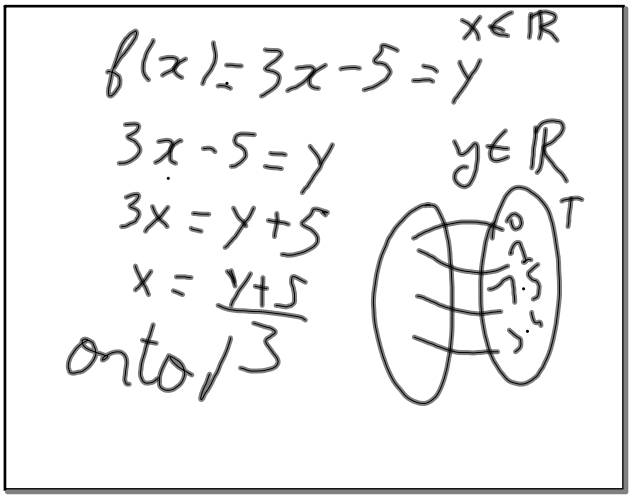
م 25-02:26 ناب عش



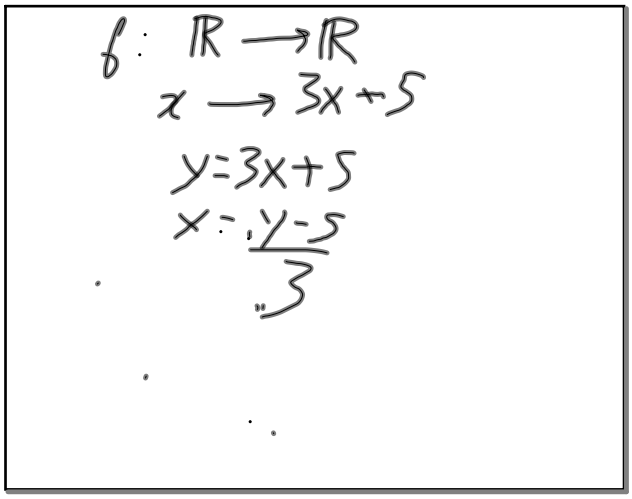
م 25-02:27 نابعش



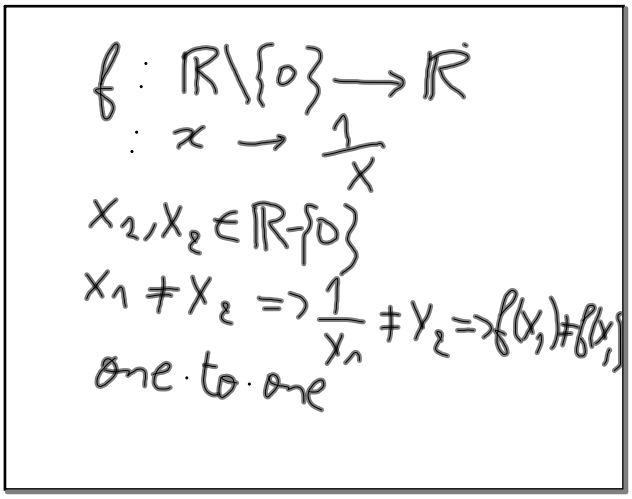
م 25-02:28 نابعش



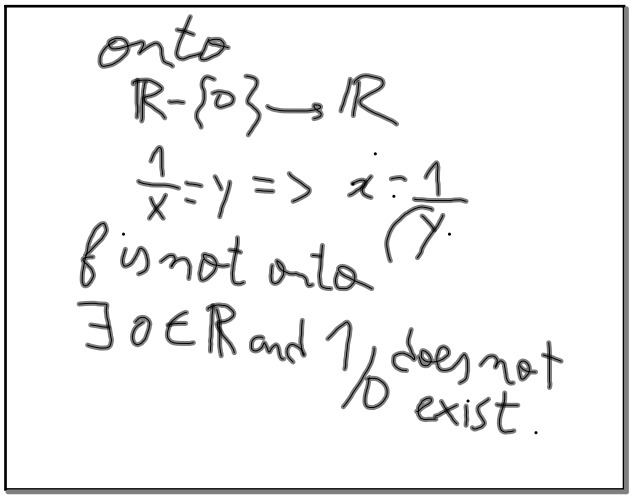
م 25-02:35 نابعش



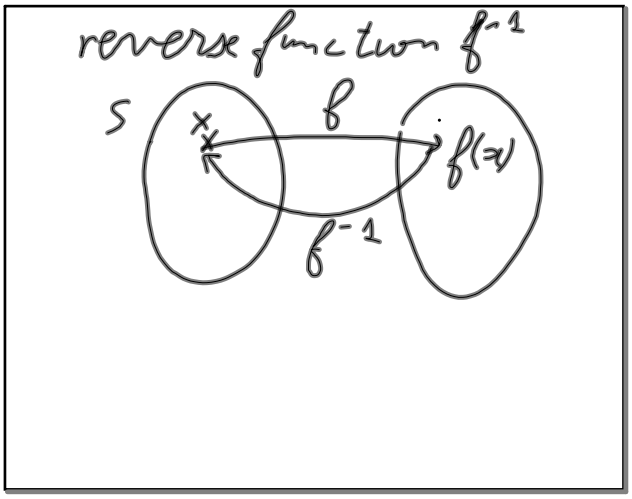
م 25-02:40 نابعش



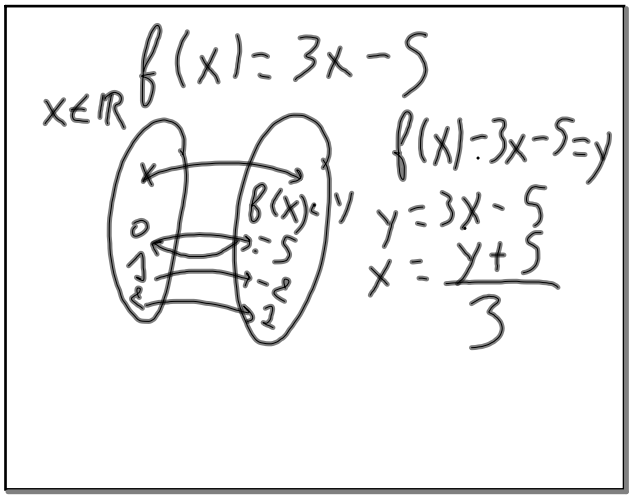
م 25-02:43 نابعش



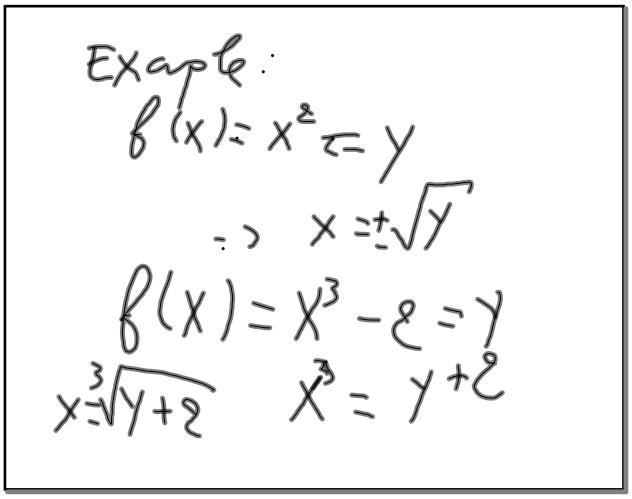
م 25-02:46 نابعش



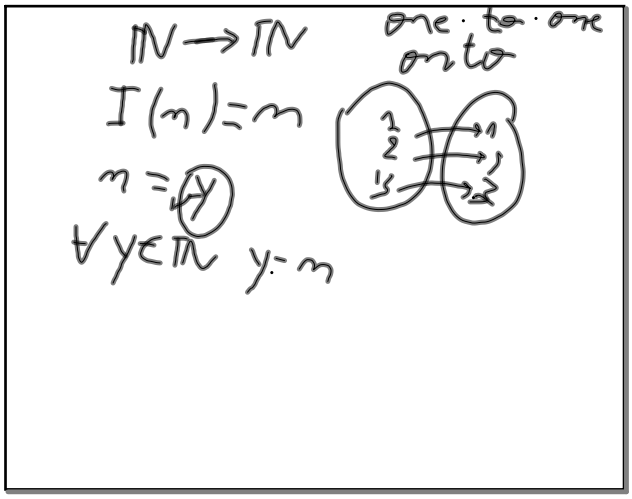
م 25-02:48 ناب عش



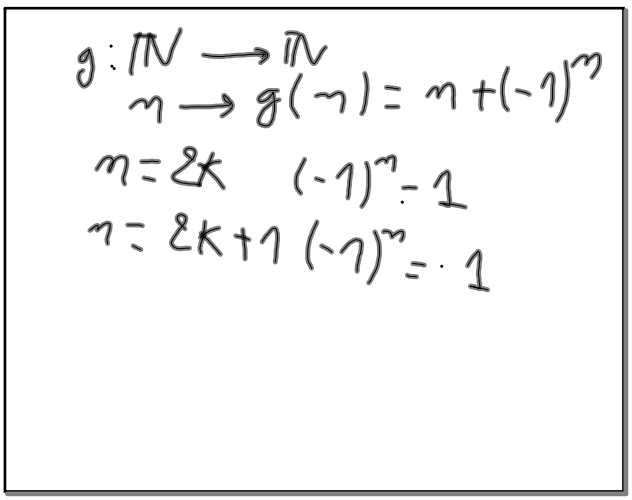
م 25-02:50 ناب عش



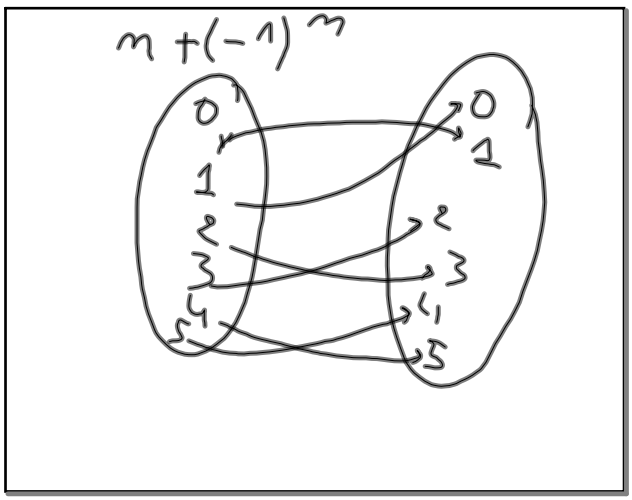
م 25-02:55 ناب عش



م 25-03:01 ناب عش



م 25-03:06 ناب عش



م 25-03:10 ناب عش

$n \in \mathbb{N}$

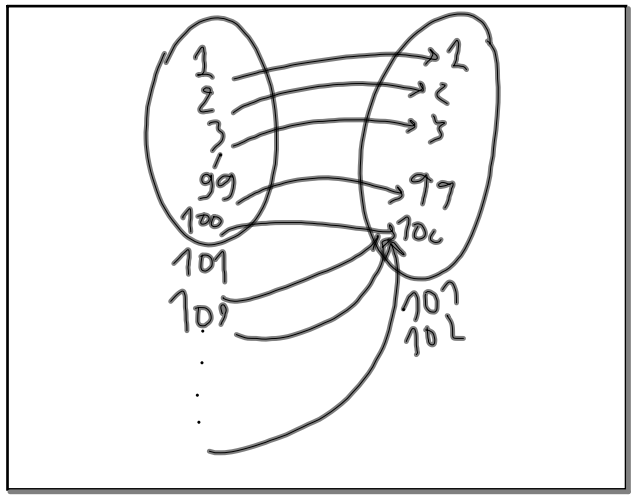
$h(n) = \min(n, 100)$

$n < 100 \quad h(n) = n$

$n \geq 100 \quad h(n) = 100$

$h : \mathbb{N} \longrightarrow \mathbb{N}$

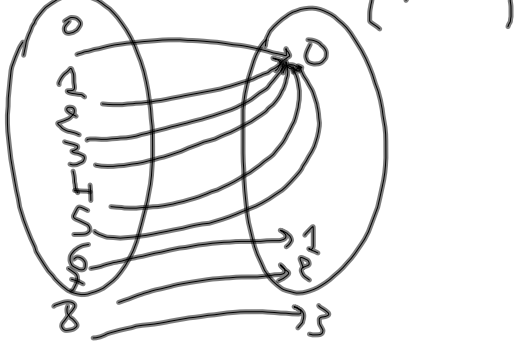
م 25-03:13 ناب عش



م 25-03:16 ناب عش

$K : \mathbb{N} \longrightarrow \mathbb{N}$

$n \longrightarrow K(n) = \max\{0, n-5\}$



م 25-02:53 ناب عش