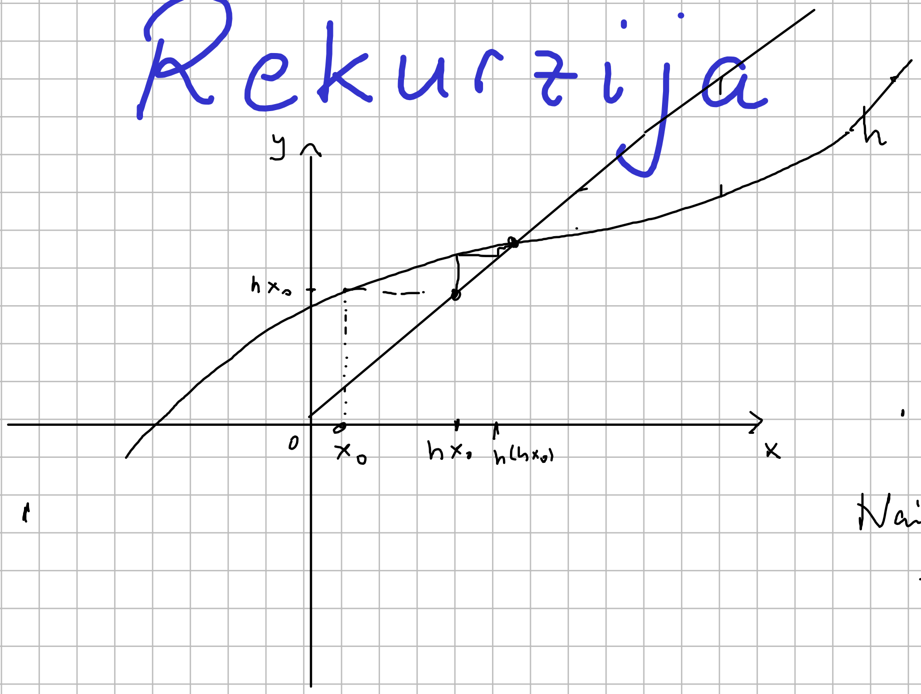
Rekurzija



$x = h(x)$
$= h(h(x))$
$= h(h(h(x)))$
$= \ldots$

Naivno:
$x = h(h(h(h(h(h(\ldots\ldots)\ldots)))$

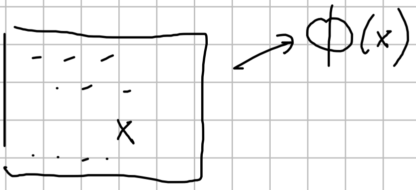
$\binom{n}{k}$ = število podmnožic s k elementi množice z n elementi

$f = A$
$g = B$ $\rightsquigarrow$ $(f, g) = (A, B)$

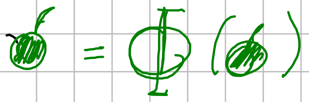
$t : (a \to a) \to a$

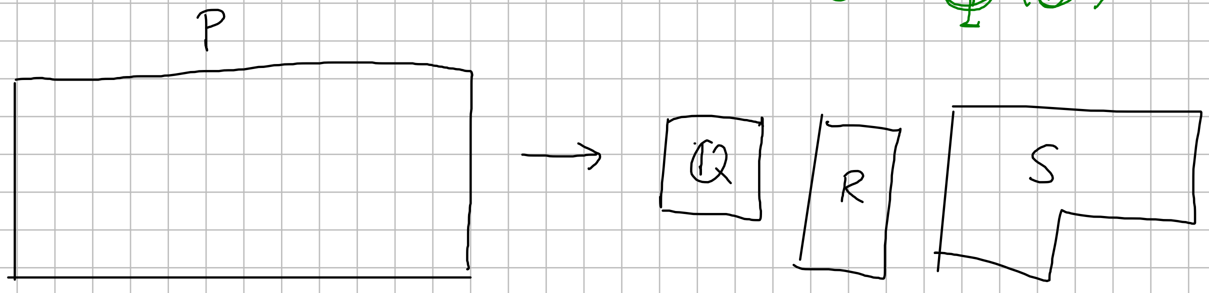
$\text{fix } t = t(\text{fix } t)$
$= t(t(\text{fix } t))$
$= t(t(t(\text{fix } t)))$
$\ldots$

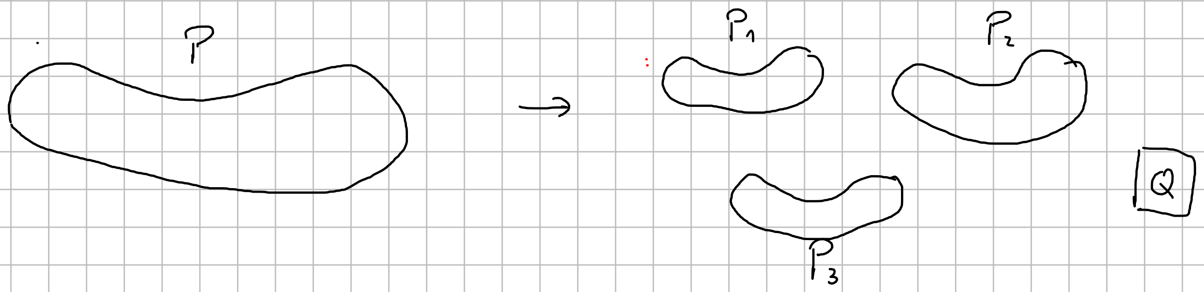
$X =$



$X = \Phi(X)$







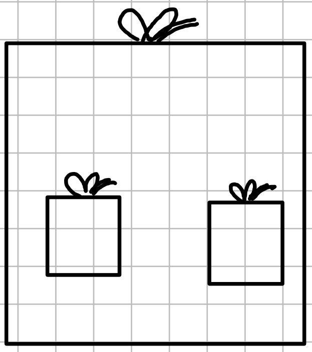
Seznam je:

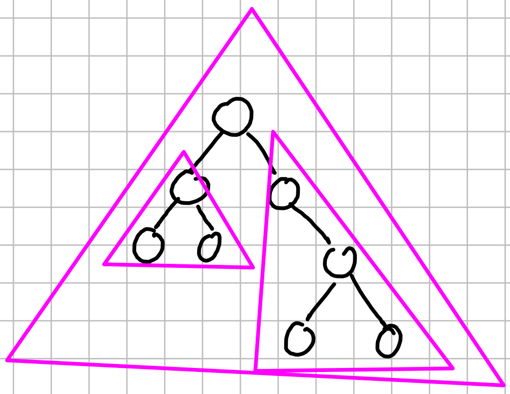
| prazen

| sestavljen iz glave in repa, ki je seznam

$1 :: (2 :: (1 :: \ldots\ldots$

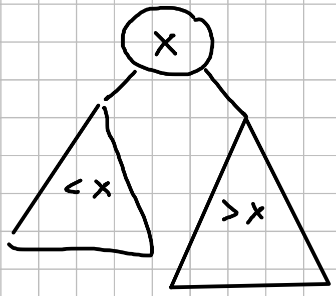
Podatek

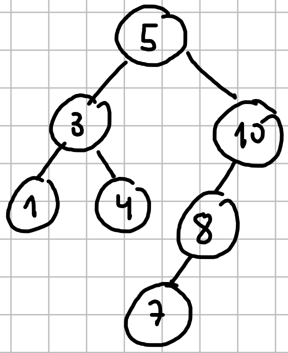


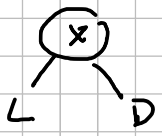


Iskalno drevo:

y







$x < y$

$x = y$

$x > y$

$<$

$\leq$

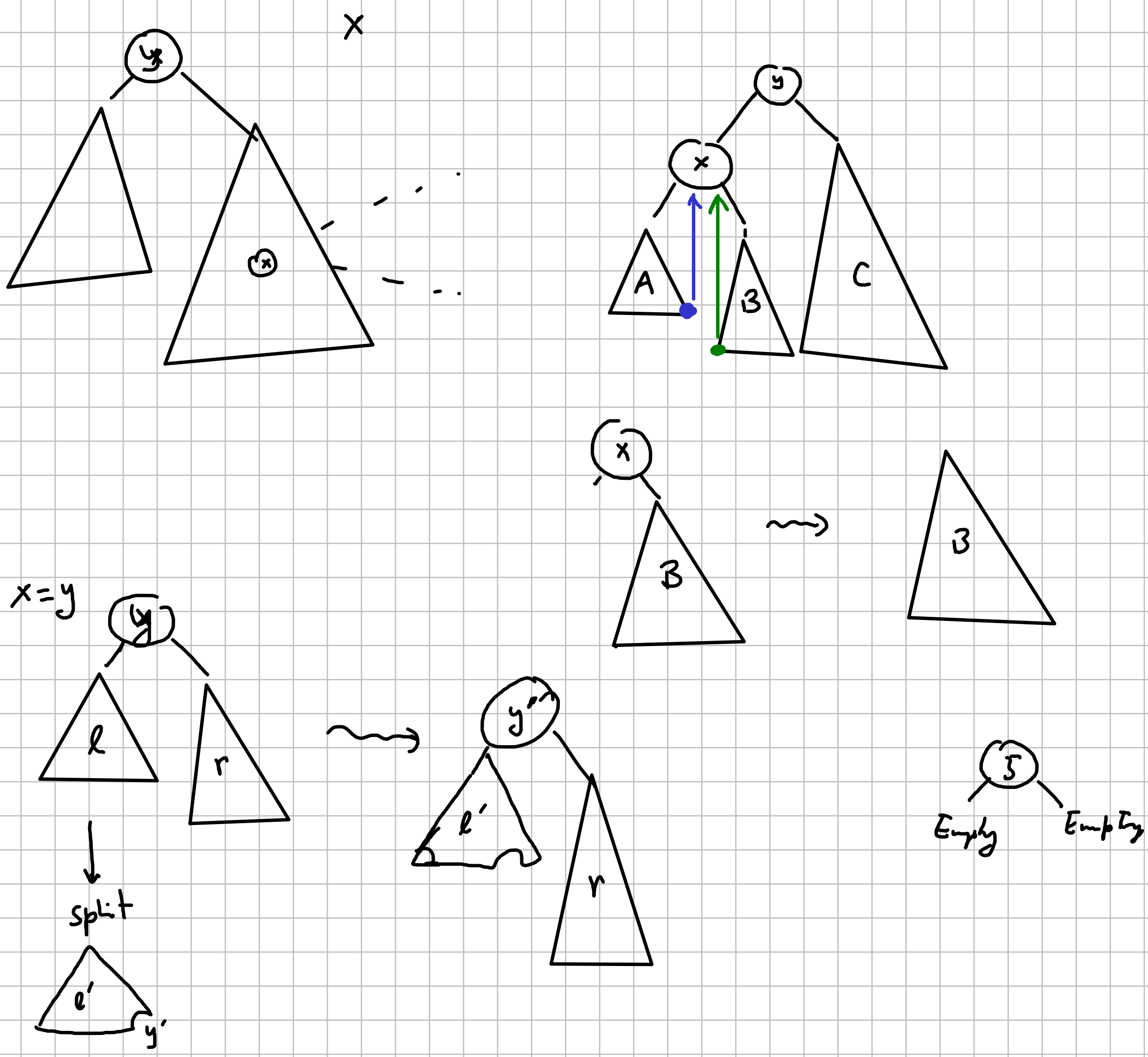
$\geq$

$=$

$\neq$

$$\text{compare } x\ y \xrightarrow[\text{int}]{} \left\{\begin{array}{lll} <0 & \text{če } x<y & \quad -1 \\ 0 & x=y & \quad 0 \\ >0 & x>y & \quad 1 \end{array}\right.$$

$\cancel{x - y}$



Primer izpeljave tipov

$$\text{if } \underbrace{\overset{\text{int ✓}}{3} < \overset{\text{int ✓}}{5}}_{\text{bool}} ✓ \text{ then } \underbrace{(\text{fun } x \to x)}_{A} \text{ else } \underbrace{(\text{fun } y \to y + 3)}_{B}$$

$< \; : \text{int} \to \text{int} \to \text{bool}$

velja: $A = B$

$\boxed{\beta = \text{int}}$

$$\underbrace{\text{fun } \underset{\alpha}{x} \to \underset{\alpha}{x}}_{\alpha \to \alpha}$$

A

$$\underbrace{\text{fun } \underset{\beta}{y} \to \underset{\text{int}}{y + \overset{\text{int ✓}}{3}}}_{\text{int} \to \text{int}}$$

B

$A = B$

$\alpha \to \alpha = \text{int} \to \text{int}$

① $\boxed{\alpha = \text{int}}$

② $\alpha = \text{int} \to \text{int} = \text{int}$ ✓

$x \to y = z \to w$

$\Downarrow$

① $x = z$

② $y = w$

Odgovor: $\text{int} \to \text{int} = A = B$