Modele matematice – P1 :

a)

apare($l1_1$,$l1_2$..,$l1_n$, el) = { false, daca l1=Ø

true, daca $l1_1$=el

apare(l_2..,l_n, el), altfel

}

verificare($l1_1$,$l1_2$..,$l1_n$, $l2_1$,$l2_2$..,$l2_m$) = { true, daca l1=Ø

false, daca apare($l2_1$,$l2_2$..,$l2_m$, $l1_1$) este false

verificare($l1_2$..,$l1_n$, $l2_1$,$l2_2$..,$l2_m$), altfel

}

multimiEgale($l1_1$,$l1_2$..,$l1_n$, $l2_1$,$l2_2$..,$l2_m$) = { true, daca apare($l1_1$,$l1_2$..,$l1_n$, $l2_1$,$l2_2$..,$l2_m$) este true si apare($l2_1$,$l2_2$..,$l2_n$, $l1_1$,$l1_2$..,$l1_m$) este true

false, altfel

}

multimiEgale([1, 2, 3], [2, 1, 3]) = true:

verificare([1, 2, 3], [2, 1, 3]) = verificare([2, 3], [2, 1, 3]) = verificare([3], [2, 1, 3]) = verificare([ ], [2, 1, 3]) = true

verificare([2, 1, 3], [1, 2, 3]) = verificare([1, 3], [1, 2, 3]) = verificare([3], [1, 2, 3]) = verificare([ ], [1, 2, 3]) = true

multimiEgale([1, 4, 3], [2, 1, 3]) = false:

verificare([1, 4, 3], [2, 1, 3]) = verificare([4, 3], [2, 1, 3]) = false

b)

nElement(N, l_1,l_2..,l_n, el) = { el, daca N=1

false, daca N<1 sau l=Ø,

nElement(n-1, l_2..,l_n, el), altfel

}

nElement(5, [1, 2, 3], el) = nElement(4, [2, 3], el) = nElement(3, [3], el) = nElement(2, [ ], el) = false

nElement(3, [1, 2, 3, 4, 5, 6, 7], el) = nElement(2, [2, 3, 4, 5, 6, 7], el) = nElement(1, [3, 4, 5, 6, 7], el) = 3

nElement(1, [5, 9, 7, 2], el) = 5

nElement(2, [ ], el) = false (lista este vida)