ΑΡΧΕΣ ΓΛΩΣΣΩΝ ΠΡΟΓΡΑΜΜΑΤΙΣΜΟΥ (Ακαδ. Έτος 2014-15)

2η Σειρά Ασκήσεων - Λύση 7ης άσκησης

(α)

```
  elemIntList 5 (p 3)
     #    5 <<< 1
      <=> "no"
     #    (p 3) <<< (h:t)
      <=> x:(3:(p (3^3))) <<< (h:t)
      <=> "yes"
= elemIntList (5-1) (3:(p (3^3)))
     #    (5-1) <<< 1
      <=> 4 <<< 1
      <=> "no"
     #    3:(p (3^3)) <<< (h:t)
      <=> "yes"
= elemIntList (4-1) (p (3^3))
     #    (4-1) <<< 1
      <=> 3 <<< 1
      <=> "no"
     #    (p (3^3)) <<< (h:t)
      <=> x:((3^3):(p ((3^3)^(3^3)))) <<< (h:t)
      <=> "yes"
= elemIntList (3-1) ((3^3):(p ((3^3)^(3^3))))
     #    (3-1) <<< 1
      <=> 2 <<< 1
      <=> "no"
     #    (3^3):(p ((3^3)^(3^3))) <<< (h:t)
      <=> "yes"
= elemIntList (2-1) (p ((3^3)^(3^3)))
     #    (2-1) <<< 1
      <=> 1 <<< 1
      <=> "yes"
     #    (p ((3^3)^(3^3))) <<< (h:t)
      <=> x:(((3^3)^(3^3)):(p (((3^3)^(3^3))^((3^3)^(3^3))))) <<< (h:t)
      <=> "yes"
= x
= x `div` x
= (x `div` x) `div` x
= ((x `div` x) `div` x) `div` x
= (((x `div` x) `div` x) `div` x) `div` x
...
```

Στην περίπτωση αυτή η Haksell εκτελεί έναν ατέρμονο υπολογισμό.

(β)

```
  elemIntList 4 (p 3)
     #    4 <<< 1
      <=> "no"
     #    (p 3) <<< (h:t)
      <=> x:(3:(p (3^3))) <<< (h:t)
      <=> "yes"
= elemIntList (4-1) (3:(p (3^3)))
     #    (4-1) <<< 1
      <=> 3 <<< 1
      <=> "no"
     #    3:(p (3^3)) <<< (h:t)
      <=> "yes"
= elemIntList (3-1) (p (3^3))
     #    (3-1) <<< 1
      <=> 2 <<< 1
      <=> "no"
     #    (p (3^3)) <<< (h:t)
      <=> x:((3^3):(p ((3^3)^(3^3)))) <<< (h:t)
      <=> "yes"
= elemIntList (2-1) ((3^3):(p ((3^3)^(3^3))))
     #    (2-1) <<< 1
      <=> 1 <<< 1
      <=> "yes"
     #    (3^3):(p ((3^3)^(3^3))) <<< (h:t)
      <=> "yes"
= 3^3
= 27
```