Resolução do teste de PF 2009

1)

```
intercala :: a -> [a] -> [a]
intercala _ []       = []
intercala _ [x]      = [x]
intercala s (x:xs) = x:s:intercala s xs
```

2)

```
selec :: Int -> [a] -> [a]
selec _ [] = []
selec y (x:xs)
| y <= 0 = [x]
selec y (x:xs) = selec (y-1) xs
```

Ex. 1

```
intercala :: a -> [a] -> [a]
intercala _ [] = []
intercala _ [x] = [x]
intercala x (y:ys) = y:x:(intercala x ys)
```

Ex. 2

```
(!!!) :: [a] -> Int -> a
(x:xs) !!! 0 = x
(x:xs) !!! n = xs !!! (n-1)
```

Ex. 3

```
data Maibe a = Nuthing | Juste a
catMaibes :: [Maibe a] -> [a]
catMaibes [] = []
catMaibes ((Juste x):xs) = x:catMaibes xs
catMaibes (Nuthing:xs) = catMaibes xs
```

Ex. 4

```
type Candidato = String
type Boletim = [Candidato]
type Votacao = [Candidato]
type Escrutinio = [(Candidato,Int)]
```

Ex. a)

```
votos :: Candidato -> Votacao -> Int
votos _ [] = 0
votos cand (x:xs) | cand == x = 1 + (votos cand xs)
                  | otherwise = votos cand xs
```

Ex. b)

```
contagem :: Boletim -> Votacao -> Escrutinio
contagem [x] vot = [(x,votos x vot)]
contagem (x:xs) vot = (x,votos x vot):contagem xs vot
```