

TD Info n°4 : corrigé

PCSI 2 Lycée Pasteur

27 septembre 2007

Exercice 1

```
[> t := array(1..10, 1..10) : for i to 10 do from j to 10 do t[i, j] := 10 * (i - 1) + j end do ; end do : t ;
```

Exercice 2

```
[> diagonale := proc (T, n)
[ local d, i ;
[ d := 0 ;
[ for i to n do d := d + T[i, i] end do ;
[ end ;
```

Exercice 3

```
[> magique := proc (t)
[ local i, j, u, v, n, p ;
[ n := nops(t) ; p := 2 * n + 2 ;
[ u := array(1..p) ; v := array(1..p) ;
[ for i to p do u[i] := 0 ;
[ for i to p do v[i] := 0 ;
[ for i to n do for j to n do u[i] := u[i] + t[i, j] end do ; end do ;
[ for i from n + 1 to 2 * n do for j to n do u[i] := u[i] + t[j, i - n] end do ; end do ;
[ for j to n do u[p - 1] := u[p - 1] + t[j, j] end do ;
[ for j to n do u[p] := u[p] + t[j, n - j] end do ;
[ for i to p do u[i] := u[i] - u[1] ;
[ if u = v then 'Ce tableau est un carré magique'
[ else 'Ce tableau n'est pas un carré magique' end if ;
[ end ;
```