Correction du TD n°7

Exercice 1 :

```pascal
program popol2;
const t=15;
type polynome=array[0..t]of
integer;
var a:polynome;
    i,na,n:integer;

procedure
affiche(n:integer;q:polynome);
var j:integer;
begin
for j:=0 to n-1 do
    write(q[j],'x^',j,'+');
writeln(q[n],'x^',n);
end;

procedure vide(var p:polynome);
var j:integer;
begin
for j:=0 to t do
p[j]:=0;
end;

procedure remplir(n:integer;var
q:polynome);
var j:integer;
begin
    for j:=0 to n do
    q[j]:=random(10)+1;
end;

procedure
addition(n1,n2:integer;p1,p2:pol
ynome;var ns:integer;var
s:polynome);
var j:integer;
begin
    if n1>n2 then ns:=n1
    else ns:=n2;
    for j:=0 to ns do
        s[j]:=p1[j]+p2[j];
```

```pascal
end;

procedure
mult(n1,n2:integer;p1,p2:polynom
e;var np:integer;var
p:polynome);
var j,k,r:integer;
begin
    np:=n1+n2;
    for j:=0 to np do
        begin
        p[j]:=0;
        for k:=0 to j do
            p[j]:=p[j]
+p1[k]*p2[j-k];
        end;
end;

procedure derive(var
n:integer;var p:polynome);
var j:integer;
begin
for j:=1 to n do
    p[j-1]:=p[j]*j;
n:=n-1;
end;

procedure suite(n:integer;var
p:polynome);
var j:integer;
begin
for j:=n+1 downto 1 do
    p[j]:=p[j]+(j-1)*p[j-1];
end;

begin
writeln('n, degre ?');
readln(n, na);
for i:=0 to na do
begin
  writeln('coeff ',i,' ?');
  readln(a[i]);
end;
affiche(na,a);
for i:=1 to n do
begin
  suite(na,a);
  na:=na+1;
  affiche(na,a);
end;
readln;
```

```
end.



Exercice 2 :
program operation_matrices;
const t=3;
type matrice=array[1..t,1..t] of
integer;
var a,b,c:matrice;

procedure affiche(c:matrice);
var i,j:integer;
begin
for i:=1 to t do
    begin
    for j:=1 to t do
        write(c[i,j],' ');
    writeln;
    end;
end;

procedure remplir(var
k:matrice);
var i,j:integer;
begin
for i:=1 to t do
    for j:=1 to t do
        k[i,j]:=random(t);
end;

procedure
somme(s1,s2:matrice;var
res:matrice);
var i,j:integer;
begin
for i:=1 to t do
   for j:=1 to t do
      res[i,j]:=s1[i,j]+s2[i,j];
end;

procedure trans(var a:matrice);
var i,j,coeff:integer;
begin
for i:=2 to t do
    for j:=1 to i-1 do
        begin
            coeff:=a[i,j];
            a[i,j]:=a[j,i];
            a[j,i]:=coeff;
        end;
```

```
end;


procedure mult(a,b:matrice;var
c:matrice);
var i,j,k,s:integer;
begin
for i:=1 to t do
    for j:=1 to t do
      begin
        s:=0;
        for k:=1 to t do
            s:=s+a[i,k]*b[k,j];
        c[i,j]:=s;
      end;
end;

Begin
randomize;
remplir(a);remplir(b);
affiche(a);
writeln('*');
affiche(b);
writeln('=');
produit(a,b,c);
affiche(c);
readln;
end.
```