

T.D. n°12 : Correction

Exercice 1

```

program ex1;
type polynome=array[0..3] of integer;
var a,pa:real;
    p:polynome;
    i:integer;
begin
  writeln('Donner les coefficients de P');
  for i:=3 downto 0 do
    begin
      writeln('Coefficient en X^',i);
      readln(p[i]);
    end;
  writeln('Donner la valeur de a');
  readln(a);
  pa:=P[3]*a*a*a+P[2]*a*a+P[1]*a+P[0];
  writeln('P(a) vaut ',pa);
  readln;
end.

```

Exercice 2

$\sum \frac{k(k-1)}{4^k} = \frac{1}{4^2} \sum k(k-1) \left(\frac{1}{4}\right)^{k-2} \quad -1 < \frac{1}{4} < 1$ donc la série converge et

$$\sum_{k=0}^{+\infty} \frac{k(k-1)}{4^k} = \frac{1}{4^2} \times \frac{2}{\left(1 - \frac{1}{4}\right)^3} = \frac{1}{16} \times 2 \times \frac{64}{27} = \frac{8}{27}.$$

```

program ex2;
type polynome=array[0..100] of real;
var p:polynome;
    x,px:real;
    k:integer;
begin
  for k:=0 to 100 do p[k]:=k*(k-1);
  writeln('Donner un r, el x');
  readln(x);
  px:=p[100];
  for k:=99 downto 0 do px:=px*x+p[k];
  writeln('P(x) vaut ',px);
  readln;
end.
(8/27 = 0,962962962...)

```