

## TP 0 : prise en main du langage

Compiler, exécuter et comprendre chacun des programmes suivants.

Les fichiers correspondants sont en ligne à l'adresse <http://proba.jussieu.fr/~roux/>.

### Programme 1

```
#include <iostream>

3 int main(void)
  {
    if (0.1 + 0.2 == 0.3)
6       {
          std::cout << "0.1 + 0.2 vaut 0.3" << std::endl;
        }
    else
9       {
          std::cout << "0.1 + 0.2 ne vaut pas 0.3" << std::endl;
12      }

    return 0;
15 }
}
```

### Programme 2

```
#include <iostream>

3 int main(void)
  {
6     std::cout << "1/3 + 1/3 + 1/3 vaut " << 1/3 + 1/3 + 1/3 << std::endl;

    return 0;
9 }
}
```

### Programme 3

```
#include <iostream>

3 int i = 1;

void f(int i)
6 {
  i = 2;
  }
9

int main(void)
12 {
  std::cout << "Avant la declaration,\ti = " << i << std::endl;

15  int i = 3;
  std::cout << "Apres la declaration,\ti = " << i << std::endl;
  f(i);
18  std::cout << "Apres l'appel de f,\ti = " << i << std::endl;
  {
    int i = 4;
21    std::cout << "Dans le bloc entre { },\ti = " << i << std::endl;
  }
  std::cout << "Hors du bloc,\t\ti = " << i << std::endl;
24  return 0;
}
```

### Programme 4

```
#include <iostream>

3 int main(void)
  {
  int i;
6  i = 1+1;
  if (i=3)
    {
9    std::cout << "1+1 = 3" << std::endl;
    }
12  return 0;
}
```

## Programme 5

```
#include <iostream>

3
int main(void)
{
6   std::cout << "Si i vaut 2," << std::endl;

   int i = 2;
9   std::cout << "(i=1) renvoie " << (i=1);
   std::cout << "\tpuis\t i vaut " << i << std::endl;

12  i = 2;
   std::cout << "(i==1) renvoie " << (i==1);
   std::cout << "\tpuis\t i vaut " << i << std::endl;

15  i = 2;
   std::cout << "(i++) renvoie " << (i++);
18  std::cout << "\tpuis\t i vaut " << i << std::endl;

   i = 2;
21  std::cout << "(++i) renvoie " << (++i);
   std::cout << "\tpuis\t i vaut " << i << std::endl;

24  i = 2;
   std::cout << "(i+=1) renvoie " << (i+=1);
   std::cout << "\tpuis\t i vaut " << i << std::endl;

27  i = 2;
   std::cout << "(i*=2) renvoie " << (i*=2);
30  std::cout << "\tpuis\t i vaut " << i << std::endl;

   return 0;
33 }
```

## Programme 6

```
#include <iostream>

3
int main(void)
{
6   int x = 0.5;
   if (x == 0)
   {
9       std::cout << "0.5 est egal a 0." << std::endl;
   }

12  return 0;
}
```

## Programme 7

```
#include <iostream>

3
int main(void)
{
6   std::cout << 0100 << std::endl;

   std::cout << 0x10 << std::endl;
9   std::cout << 1.1e4 << std::endl;

12  std::cout << 0x1.8p10 << std::endl;

   return 0;
15 }
```

## Programme 8

```
#include <iostream>
#include <math.h>

3

const int N = 100;
6 const double alpha = 2*M_PI/N;

9
int main(void)
{
12  float x=0;
   double y=0;
   for (int i=0; i<N; i++)
       {
15     x += 1000*cos(i*alpha);
       y += 1000*cos(i*alpha);
       }
18

   std::cout << "Valeur theorique :\t0\n";
   std::cout << "Valeur 1 :\t\t" << x << std::endl;
21  std::cout << "Valeur 2 :\t\t" << y << std::endl;
   return 0;
}
```

## Programme 9

```
#include <iostream>

3
unsigned fact(unsigned n)
{
   int resultat = 1;
6   for (unsigned i=1 ; i<=n ; i++)
       {
           resultat *= i;
9       }
   return resultat;
}

12
int main(void)
{
15  for (unsigned n=0; n<37; n++)
       {
           std::cout << fact(n) << std::endl;
18       }
   return 0;
}
```