TD N°10 langage C++

Exercice 1 :

```cpp
#include<iostream>
using namespace std;
#include<cmath>

double distance(double xa, double ya, double xb, double yb)
{
double dx,dy;
dx=xa-xb;
dy=ya-yb;
return sqrt(dx*dx+dy*dy);
}

int main()
{
double x1,y1,x2,y2,d;

cout<<"Tapez l'abscisse de A : ";cin>>x1;
cout<<"Tapez l'ordonnée de A : ";cin>>y1;
cout<<"Tapez l'abscisse de B : ";cin>>x2;
cout<<"Tapez l'ordonnée de B : ";cin>>y2;

d=distance(x1,y1,x2,y2);

cout<<"La distance AB vaut : "<<d<<endl;
return 0;
}
```

Exercice 2 :

```cpp
#include<iostream>
using namespace std;
#include<cmath>

double f(double x, bool &ok)
{
double r=0;

if(x>=1 && x<=2){r=sqrt((x-1)*(2-x));ok=true;}
        else ok=false;
return r;
}

int main()
{
double x,y;
bool ok;
cout<<"Tapez x :";cin>>x;
y=f(x,ok);
if(ok)cout<<"f(x) vaut :"<<y<<endl;
        else cout<<"x n'est pas correct"<<endl;
return 0;
}
```

Exercice 3 :

```cpp
#include<iostream>
using namespace std;
#include<cmath>

bool f(int x)
{
bool r=true;
int d=2;
while(r && d*d<=x)if(x%d==0)r=false; else d++;
return r;
}

int main()
{
int x;
bool premier;
do{
cout<<"Tapez x :";cin>>x;
}while(x<=0);
premier=f(x);
if(premier)cout<<"x est premier"<<endl;
        else cout<<"x n'est pas premier"<<endl;
return 0;
}
```

Exercice 4 :

```cpp
#include<iostream>
using namespace std;

bool premier(int x)
{
bool r=true;
int d=2;
while(r && d*d<=x)if(x%d==0)r=false; else d++;
return r;
}

int Npremier(int N)
{
int nb=0;
int i=2;

while(nb!=N)
        {
        if(premier(i))nb++;
        i++;
        }
return i-1;
}

int main()
{
int N,p;
cout<<"Tapez la valeur de N : ";cin>>N;
p=Npremier(N);
cout<<"Le N-ième nombre premier est : "<<p<<endl;
return 0;
}
```

Exercice 5 :

```cpp
#include<iostream>
using namespace std;

void swap(int &x, int &y)
{
int temp;
temp=x;
x=y;
y=temp;
}

int main()
{
int a,b;
cout<<"Tapez a :";cin>>a;
cout<<"Tapez b :";cin>>b;
swap(a,b);
cout<<"a vaut : "<<a<<endl;
cout<<"b vaut : "<<b<<endl;

return 0;
}
```