Hanlin Cai 832002117 20122161

**Homework5\_2**

*a. Write a C++ program to compute*

**Code :**

#include<iostream>

#include<cmath>

using namespace std;

int main()

{

int i;

cout << "1" << endl;

for (i=2; i <= 100; i++)

{

int j = 2;

for (; j <= i; j++)

{

if (i%j == 0)

break;

}

if (j>=sqrt(i)) //Reduced number of comparisons

{

cout << i << endl;

}

}

cout << "\n "<< endl;

}

//This code is created by Hanlin Cai

//MU number : 20122161

//FZU number : 832002117

*b. If n is greater than sqrt(number), the number is not equally divisible by n. Why?*

**Answer:**

If a number is a factor of N, then the natural number divided by N must also be a factor of N. If N is written as a product of two numbers, the two multipliers must be equal, or one is larger than the other, and the smaller must be larger than the principal square root.

So if [1, ] has factors of N then there must be factors of N in [, N]. And if [1, ] has no factors of N then there must be no factors of N in [, N], so is enough.