**Problem No: 01**

**Topic: The Foundations: Logic and Proof**

**Problem Title:**

Find the pair of (x,y) where x^2+y^2=z^2 , z is given, x, y and z are integers.

**Source Code:**

#include <iostream>

using namespace std;

int main()

{

int x, y, z, flag = 0;

cout << "Equation: x^2 + y ^ 2 = z ^ 2\n";

cout << "Enter z: ";

cin >> z;

cout << "(x, y): \n";

for(int i = 0; i < z; i++){

for(int j = 0; j < z; j++){

if(i \* i + j \* j == z \* z){

cout << "(" << i << ", " << j << ")" << endl;

flag = 1;

}

}

}

if(flag == 0)

cout << "Not Found\n";

return 0;

}

**Output:**

Equation: x^2 + y ^ 2 = z ^ 2

Enter z: 10

(x, y):

(6, 8)

(8, 6)

Process returned 0 (0x0) execution time : 1.401 s

Press any key to continue.

**Problem No: 02**

**Topic: The Foundations: Logic and Proof**

**Problem Title:**

Find the pair of (x,y) where x^3+y^3=z^3 , z is given, x, y and z are integers.

**Source Code:**

#include <iostream>

#include <cmath>

using namespace std;

int main()

{

int x, y, z, flag = 0;

cout << "Equation: x^3 + y ^ 3 = z ^ 3\n";

cout << "Enter z: ";

cin >> z;

cout << "(x, y): \n";

for(int i = 0; i < z; i++){

for(int j = 0; j < z; j++){

if(i \* i \* i + j \* j \* j == z \* z \* z){

cout << "(" << i << ", " << j << ")" << endl;

flag = 1;

}

}

}

if(flag == 0)

cout << "Not Found\n";

z++;

return 0;

}

**Output:**

Equation: x^3 + y ^ 3 = z ^ 3

Enter z: 8

(x, y):

Not Found

Process returned 0 (0x0) execution time : 3.891 s

Press any key to continue.