


PRELAB QUESTIONS

PART A

2 3 3 6 7....19

Example : Enter a positive interger

2-3-4-6-7

count ; 0 * 2,3,4,5.....  Keep adding one unit count=19

MAX; 0-99 2,3,4,,6  Put the values of X that are greater than max


which number 0 2 3 4

5

PART B


i 0 1 2 3 4 5 CONDITION: for(i=0; i<8; i++)

j 2 3 4 5 CONDITION: for(j=i; j<6; j+1)

ANS  1 2;
2 3;
3 4;
4 5;
5
6
7

0 1 2 3 4 5 CONDITION: for(i=0; i<8; i++)


j 2 3 4 5 CONDITION: for(j=i; j<6; j+1

ANS  1 2;
2 3;
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i

0 1 2 3 4 5 CONDITION: for(i=0; i<8; i++)

j 2 3 4 5 CONDITION: for(j=i; j<6; j+1

ANS  1 2;
2 3;
3 4;
4 5;
5
6
7

PRELAB

STEP 1

A positive integer triple (a, b, c) with $0 < a < b < c$ and $a^2 + b^2 = c^2$ is called a Pythagorean triple. Write a program in C which reads an integer N .

WHAT IS A PYTHAGOREAN TRIPLE?

A "Pythagorean Triple" is a set of positive Integers, a , b and c that fits the rule:

$$a^2 + b^2 = c^2$$

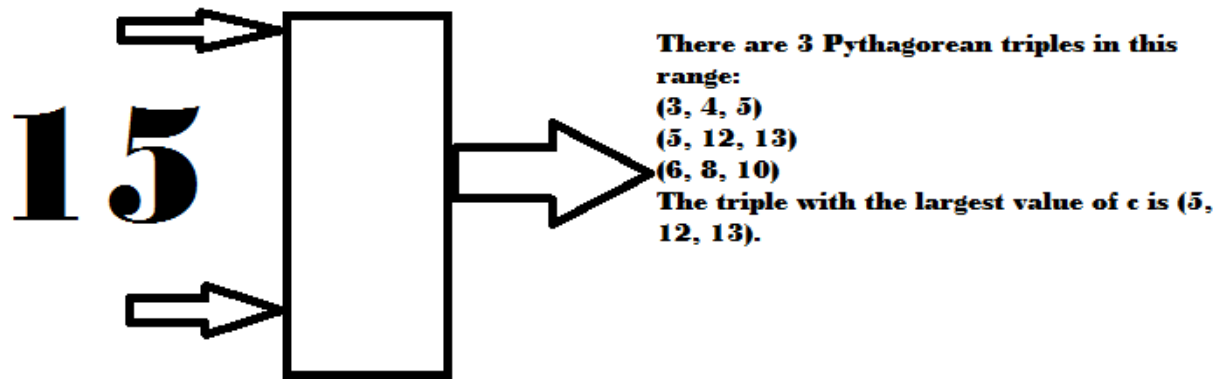
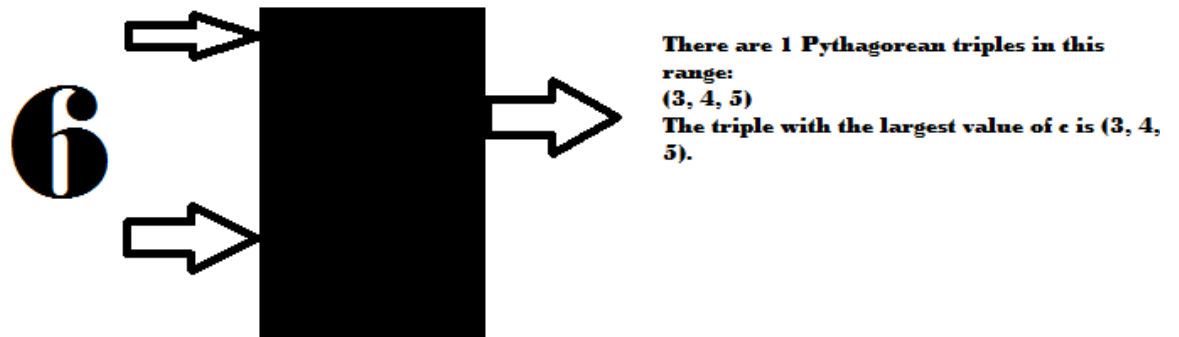
STEP 2; gathering information and input and output description

Write a program in C which reads an integer N and prints

1. The total number of Pythagorean triples (a, b, c) with $c < N$,
2. Every such Pythagorean triple, and
3. The triple that has the largest value of c .

FOR example

- if we input the number six there is only one Pythagorean theorem which is 3,4,5



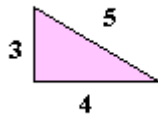
STEP 3

A Pythagorean triple is a set of three integers a , b , c which form the sides of a right angled triangle.

The smallest Pythagorean triple is the set of numbers 3, 4, 5.

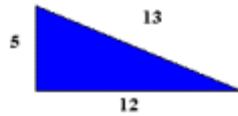
What formula do a , b , c have to satisfy for the triangle to have a right angle opposite side C ?

3, 4, 5



$$3^2 + 4^2 = 5^2$$

5, 12, 13



$$5^2 + 12^2 = 13^2$$

9, 40, 41



$$9^2 + 40^2 = 41^2$$

STEP 4:

```
/* Determine and print Pythagorean triplets */
```

```
#include <stdio.h>
```

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

```
void main()
```

```
{
```

```
    int max; /* max value of side a or b */
```

```
    int a, b; /* two sides of a triangle */
```

```
    printf("Enter max value of sides a, b: ");
```

```
    scanf("%d", &max);
```

```
    for (a = 1; a <= max; a++)
```

```
    {
```

```
        for (b = a; b <= max; b++)
```

```
        {
```

```
            float c = sqrt(a * a + b * b); /*third side*/
```

```
            if (c == (int) c)
```

```
                printf ("%2d %2d %2d\n", a, b, (int) c);
```

```
        }
```

```
    }
```

```
    getch();
```

```
}
```

Final step (5)

TEST AND VERIFICATION OF ALOGRITHMS

