**Lab Task 4.2:**

**Problem Statement:**

The Pythagorean theorem states that the sum of the squares of the sides of a right triangle is equal to the square of the hypotenuse. For example, if two sides of a right triangle have lengths of 3 and 4, then the hypotenuse must have a length of 5. Together the integers 3, 4, and 5 form a Pythagorean triple. There are an infinite number of such triples. Given two positive integers, m and n, where m > n, a Pythagorean triple can be generated by the following formulas:

Text, letter

Description automatically generated

The triple ( side1 = 3, side2 = 4, hypotenuse = 5) is generated by this formula when m = 2 and n = 1. Write a program that takes values for m and n as input and displays the values of the Pythagorean triple generated by the formulas above.

**Sample Program Output:**

The values of m and n: 2 1

The sides of Pythagorean Triple are:

Side1: 3

Side2: 4

Hypotenuse: 5

**HOME Task 3.1:** Refer to screenshot given at the end of question. Perform the following changes to this program. Did your program run after making the change? If no, then why? If yes, then what is different from previous output and why?

1. Change line 6 to “char alphabet = x;”.
2. Change line 6 to “char alphabet = “x”;”.
3. Change line 6 to “char alphabet = 120;”.
4. Change line 7 to “int i =’x’;”.
5. Change line 7 to “int i = 500000000000;”.
6. Change line 7 to “int i =3.15194;”.
7. Copy the value of ‘d’ to ‘x’ and see output of your program.
8. Change line 12 to “printf("\nString: %s", "Sample \n\tString");”
9. Change line 10 to “printf("Char: %d \nFloat: %f", alphabet, x);”.
10. Change line 11 to “printf("\nDouble: %lf \nInteger: %c", d, i);”.

Text

Description automatically generated

