Variables Programs

Exercise 1 - Triangle

Write a program to calculate and output the area of a triangle. The integer height of the triangle is 7 cm and the base is 3 cm. The area of a triangle is calculated: **area = ½ * base * height**. Output the area to 1 decimal place.

The correct output should be: "The area of a triangle is 10.5 cm."

Exercise 2 - Temperature

Write a program to convert 85 degrees Fahrenheit to Celsius degrees. The formula is:

Celsius = 5 / 9 * (Fahrenheit - 32)

Output the Celsius conversion to 1 decimal place. Output both temperatures in a sentence similar to the one shown below. Output the area to 1 decimal place.

The correct output should be: "The conversion of 85 degrees Fahrenheit is 29.4 degrees Celsius."

Exercise 3 – DiceRoll

Write a program that simulates the roll of one die by using the following expression to select a random number between 1 and 6:

(int)(Math.random() * 6) + 1

Your program should "roll" the die twice and add the results together to the total roll. Output should look similar to:

The first die comes up 3
The second die comes up 5
Your total roll is 8

Exercise 4 - QuadraticEquation

Write a program that finds the value of the quadratic equation. Here is the equation:

$3x^2 - 8x + 4$

Your program should prompt the user to enter a value of x. Test your program by entering the different values of "x". For each of the following values of x, output should look similar to:

Values of x	Output
4.0	`At x = 4.0 the value is 20.0`
2.0	`At x = 2.0 the value is 0.0`
2/3	`At x = 2/3 the value is 0.0`
6.0	`At x = 6.0 the value is 64.0`
25.5	`At x = 25.5 the value is 1750.75`