Declare and implement a class ***Date*** that has 3 **int** data members: day, month and year, and has a no-argument **constructor** that creates a ***Date*** object and initializes its data members to zeros, a 3-argument **constructor** that creates a ***Date*** object and initializes its data members to given values, and two member functions: ***get_date()*** that reads from the keyboard the data of a ***date*** object in the form dd/mm/yy, and ***show_date()*** that displays a ***date*** object in the form dd/mm/yy, and a **compare** that compares two date objects and returns true if the first date is less than the second one, and false otherwise. Finally, write a main program that creates a ***date*** object and initializes it with today's date, and creates another ***date*** object and reads its data from the keyboard, then compares these

two dates and displays them with a message indicating the result of the comparison.

Create a class ***Circle*** that has 3 data members, ***x***, ***y***, and ***radius***, representing the coordinates of the center and the radius of a circle, and has a constructor that initializes the ***Circle*** objects with given center coordinates and radius. It also has 3 member functions: (1) ***show_data()*** to display the values of the center coordinates and radius of a ***Circle*** object, (2) ***area()*** that calculates the area of a ***Circle*** object by using the formula πr^2, and (3) ***circum()*** that calculates the circumference of a ***Circle*** object by using the formula $2\pi r$, where $\pi = 3.14$.

1. Define a class **Distance** that has two data members: ***feet*** (of type **int**) and ***inches*** (of type **float**), and has a constructor that initializes the data members of a **Distance** object with given values. It has a member function ***toFeet()*** that converts the ***feet*** and ***inches*** of a **Distance** object to feet and returns it, where the feet value = ***feet*** + ***inches***/12.0. It also has two operators: ***getdist*** to get its data from the specified input stream, and **showdist** to output its data on the specified output stream
2. Define a class **Triangle**, that has four data members: ***a, b, and c*** (of type **int**), representing the sides of a triangle, and ***area*** (of type double), representing the area of a triangle, and has a constructor that initializes the data members ***a, b, and c*** of a **Triangle** object with

given values. It has a member function ***get_area()*** that calculates the area of a **Triangle** object, where the area of a triangle of sides a, b, and c is obtained by the formula:

area = $\sqrt{s(s-a)(s-b)(s-c)}$, where $s = \frac{a+b+c}{2}$.

It also has two functions: ***getdata*** to get its data from the specified input stream, and **showdata** to output its data on the specified output stream.

3. Write a program that creates an array of 5 objects of class **Triangle**. In a loop, gets from the user the data of the 5 **Triangle** objects, and calculate their areas. When the user has finished entering the data for all **Triangle** objects, display their data (3 sides and area).