Department of Computer Science

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Write the C++ program of the following problems.

Problem 1:

Suppose an Airline Company is giving discounts on the following bases:

Input	Discount on the Ticket Price
Any Country	5%
Ireland	10%

Write a program that takes the country's name, the ticket price in dollars, and then displays the final price of the ticket after the discount.

Test Cases

Input	Output
Country: Germany Ticket Price: 1000	Discounted Price: 950
Country: Ireland Ticket Price: 4000	Discounted Price: 3600

Problem 2:

Write a challan issuing program to tell if the car was speeding or not. If the speed is greater than 100km/h then the car will be challaned, otherwise the car is following the speed limit.

Test Cases

Input	Output
Speed : 105	Halt….YOU WILL BE CHALLANED!!!
Speed : 100	Perfect! You're going good.

Problem 3:

Take the temperature of Two Cities, and if the difference between these temperatures is more than 10 degrees, then print on the console “Difference is too Big”.

Test Cases

Input	Output
Temperature City 1: 40 Temperature City 2: 20	Difference is too Big Program Ends
Temperature City 1: 30 Temperature City 2: 25	Program Ends

Problem 4:

A Flower shop offers three types of flowers. Red Rose, White Rose, and Tulips.

Red Rose	White Rose	Tulips
2.00 dollars/pc	4.10 dollars/pc	2.50 dollars/pc

Write a program that takes the number of red roses, white roses, tulips as input from the user, then calculates the total price of the flowers.

If the price is greater than **200$,** it gives a 20% **discount** on the total price and prints the original price and the total payable amount after the discount on the screen.

Test Cases

Input	Output
Red Rose: 50 White Rose: 20 Tulips: 40	Original Price: 282 Price after Discount: 225.6
Red Rose: 70 White Rose:30 Tulips: 45	Original Price: 375.5 Price after Discount: 300.4

Problem 5:

Tom Cat likes to sleep all day, but his owner always plays with him whenever he has free time. To sleep well, the norm of games that Tom has is 30,000 minutes per year. The time for games he has, depends on the holidays that his owner has.

Days	Time the Owner plays with Tom per day
Working Days	**63 Minutes per day**
Holidays	**127 Minutes per day**

Write a program that reads the number of holidays and prints whether Tom can sleep well and how much the difference from the current year's norm. It is assumed that there are 365 days in one year.

> **Example:** 20 holidays.
> The working days are 345 (365 - 20 = 345).
> The time for games is 24,275 minutes (345 * 63 + 20 * 127).
> The difference from the norm is 5,725 minutes (30,000 – 24,275 = 5,725) or 95 hours and 25 minutes.

Test Cases

Input	Output
Holidays: 20	Tom sleeps well 95 hours and 25 minutes less for play
Holiday: 113	Tom will run away 3 hours and 47 minutes for play

Problem 6:

Write a program that **inputs the speed** (integer number) and prints **speed information**. For speed **up to 10** (inclusive), print "**slow**". For speed **over 10** and **up to 50**, print "**average**". For speed **over 50 and up to 150**, print "**fast**". For speed **over 150 and up to 1000**, print "**ultra fast**". For higher speed, print "**extremely fast**".

Test Cases

Input	Output
8	slow
49.5	average
126	fast
160	Ultra fast
3500	Extremely fast

Problem 7:
Write a program that **inputs the sizes of a geometric figure** and **calculates its area**. The figures are of four types: **square**, **rectangle**, **circle** and **triangle**.

The first line of the input provides the type of the figure (square, rectangle, circle, triangle).

- If the figure is a **square**, the next line will take one number as input – the length of its **side**. (HINT: $A = s^2$)
- If the figure is a **rectangle**, the next two lines will take two numbers as input – the lengths of its **sides**. (HINT: A = l * w)
- If the figure is a **circle**, the next line will take one number as input – the **radius** of the circle.(HINT: $A = pi \times r^2$)
- If the figure is a **triangle**, the next two lines will take two numbers as input – the length of the **base** and the length of its **height**. (HINT: $A = 1/2 \times b \times h$)

Test Cases

Input	Output
Square 5	25
Rectangle 7 2.5	17.5
Circle 6	113.097
Triangle 4.5 20	45

Problem 8:
Write a program that converts a number in the range of [**0 ... 100**] into text (in English).

Test Cases

Input	Output
25	twenty five
42	forty two
6	six