Practice Problem Set 2

1. Write a program that asks the user to enter an integer and checks whether it is divisible by 3 or 5.
    Examples

Input	Input
15	3
Output	Output
Divisible by 3 and 5	Divisible by 3

Input	Input
10	17
Output	Output
Divisible by 5	Not divisible by 3 or 5

2. Following is the income tax percentage a person has to give according to his salary range:

Salary Range	Tax percentage of income
Below 30,000	4%
30,000-70,000	10%
Above 70,000	15%

    Write a program that asks the user to input his salary and prints the amount of income tax he has to give.
    Examples

Input
45000
Output
4500

    Hints:
    Income Tax = Salary * Tax percentage of income

3. When stocks are sold or purchased through a broker, the broker's commission is often computed using a sliding scale that depends upon the value of stocks traded. Let's say that a broker charges the amounts shown in the following table:

Transaction Size	Commission rate
Under $2,500	$30 + 1.7%
$2,500 - $6,250	$56 + 0.66%
$6,250 - $20,000	$76 + 0.34%
$20,000 - $50,000	$100 + 0.22%
$50,000 - $500,000	$155 + 0.11%
Over $500,000	$255 + 0.09%

    The minimum charge is $39.
    Write a program that asks the user to enter the amount of trade, then displays the amount of commission.
    Examples

Input	Input
30,000	125
Output	Output
$166.00	$39.00

4. The following table shows the postal code of different areas of Bangladesh.

Post Code	Area
1206	Dhaka Cantonment
1209	Jigatala
1213	Banani
1212	Badda
1236	Dhania
1332	Narisha
1310	Keraniganj
1211	Lalbag
1216	Mirpur

Write a program that asks the user to enter a postal code and if the value of postal code is in the table then print the corresponding area.

Examples

Input	Input
1332	1250
Output	Output
Narisha	Could not find

5. Write a program that calculates how many digits the number has. Assume, that the number will contain at most 5 digits.

Examples

Input	Input
1332	125
Output	Output
Number of digits = 4	Number of digits = 3

Hints:

For a 1 digit number: min number = 0 and max number = 9

For a 2 digit number: min number = 10 and max number = 99

6. Write a program that asks the user for a 24-hour time format and converts it into a 12-hour time format.

Examples

Input	Input	Input
21 12	24 00	12 00
Output	Output	Output
9:12	0:00	12 00

7. Write a program that asks the user to enter two dates in (day-month-year) format and then indicates which one is earlier.

Examples

Input
3 6 08
5 6 07
Output
5/6/07 is earlier than 3/6/08

8. Write a program that finds the largest and smallest of four integers.

Examples

Input
10 20 30 40
Output
Largest = 40
Smallest = 10

9. Here is a simplified version of Beaufort scale, which is used to estimate wind force:

Speed(Knots)	Description
< 1	Calm
1 - 3	Light air
4 - 27	Breeze
28 - 47	Gale
48 - 63	Storm
> 63	Hurricane

Write a program that asks the user to enter a wind speed (in knots), then displays the corresponding description.
Examples

Input
28
Output
Gale

10. In Problem Set 1.1, you came across a problem where you had to find check digit for a given Universal Product Code (UPC) from the first 11 digits.

Now your task is to write a program that checks if a UPC is valid or not.

Hints:
For finding the check digit from first 11 digits please see - Modern C: Computing a UPC Check Digit
Chapter 4 (Page56)
After finding the check digit from the first 11 digits compare it with the 12th digit of the UPC.
Examples

Input
0 1 3 8 0 0 1 5 1 7 3 5
Output
Valid

Input
0 5 1 5 0 0 2 4 1 2 8 2
Output
Not Valid