**1. Numbers up to 1000 ending in 7**

Write a function that prints the numbers in the range from 1 to 1000 that end with 7.

**Input**: *(none)*  
**Output**:

7

17

27

…

997

**Hints**:

1. Make a for loop from 7 to 997 and check each number whether it ends in 7.
2. A number ends with 7 if the remainder when divided by 10 is equal to 7.

**2. Multiplication Table**

Write a function that receives a number (from 1 to 10) and prints the multiplication table in the console.

**Example Input / Output**:

Input: 5

Output:

1 \* 5 = 5

2 \* 5 = 10

3 \* 5 = 15

4 \* 5 = 20

5 \* 5 = 25

6 \* 5 = 30

7 \* 5 = 35

8 \* 5 = 40

9 \* 5 = 45

10 \* 5 = 50

**Sample Exam Problems**

**3. Histogram**

You are given **n** integers in the range [1…1000].

* A percentage **p1** of them are below 200.
* A percentage **p2** are between 200 and 399.
* A percentage **p3** are between 400 and 599.
* A percentage **p4** are between 600 and 799.
* The rest (**p5**) are 800 or above.

Write a program that calculates and prints the percentages **p1, p2, p3, p4, p5**.

**Example**:  
We have n = 20 numbers:  
53, 7, 56, 180, 450, 920, 12, 7, 150, 250, 680, 2, 600, 200, 800, 799, 199, 46, 128, 65

Result:

* < 200: 12 numbers → 12 / 20 \* 100 = 60.00%
* 200–399: 2 numbers → 10.00%
* 400–599: 1 number → 5.00%
* 600–799: 3 numbers → 15.00%
* ≥ 800: 2 numbers → 10.00%

**Input**

* First line: integer **n** (1 ≤ n ≤ 1000) – number of values.
* Next **n** lines: one integer in the range [1…1000].

**Output**  
Print 5 lines, each with a percentage between 0.00% and 100.00%, formatted with **two digits after the decimal point**.

**4. Smart Lily**

Lily is now **N** years old. For each birthday she gets a present:

* On **odd** birthdays (1, 3, 5...n) she gets toys.
* On **even** birthdays (2, 4, 6...n) she gets money.

On her 2nd birthday she receives **10.00 BGN**, and the amount increases by 10.00 BGN for every next even birthday (2 → 10, 4 → 20, 6 → 30...).

Her brother takes **1.00 BGN** every time she gets money.

She sells her toys for **P** BGN each and adds the amount to her savings. She wants to buy a washing machine for **X** BGN.

Write a program that calculates how much money Lily saved and whether she can afford the washing machine.

**Input**

1. Lily’s age – integer [1...77]
2. Price of washing machine – floating point [1.00...10 000.00]
3. Price of toy – integer [0...40]

**Output**

* If she has enough money:  
  "Yes! {N}" – where N is the leftover money
* Otherwise:  
  "No! {M}" – where M is the money needed

Print numbers with **two decimal places**.

**5. Salary**

The boss notices that more employees waste time on distracting websites.  
To prevent this, he performs random checks of the open browser tabs.

Penalties:

* "Facebook" → 150 BGN
* "Instagram" → 100 BGN
* "Reddit" → 50 BGN

**Input**

1. Number of open tabs **n** – integer [1...10]
2. Salary – integer [500...1500]
3. Then **n** lines – the name of the website in the tab

**Output**

* If the salary becomes ≤ 0:  
  "You have lost your salary."
* Otherwise: print the remaining salary as an integer.

**6. Oscars**

You are asked by the Academy to write software that calculates points for an actor/actress.

The Academy gives initial points. Then each jury member gives points.

Formula:  
points += (length of jury member’s name \* jury points) / 2

If at any moment the points exceed **1250.5**, the program ends, and it’s printed that the actor got a nomination.

**Input**

1. Actor’s name – text
2. Initial Academy points – floating number [2.0...450.5]
3. Number of jury members **n** – integer [1…20]
4. For each jury member:
   * Name – text
   * Points – floating number [1.0...50.0]

**Output**

* If points > 1250.5:  
  "Congratulations, {actor} got a nominee for leading role with {points}!"
* Otherwise:  
  "Sorry, {actor} you need {needed points} more!"

Format results with **one digit after the decimal point**.

**7. Trekking Mania**

Climbers from all over Bulgaria gather in groups and set goals for which mountain they’ll climb.

Depending on the group size:

* Up to 5 → Musala
* 6 to 12 → Mont Blanc
* 13 to 25 → Kilimanjaro
* 26 to 40 → K2
* 41+ → Everest

Write a program that calculates the percentage of climbers climbing each mountain.

**Input**

1. Number of groups – integer [1...1000]
2. For each group: number of people [1...1000]

**Output**  
Print 5 lines, each with percentage (0.00% to 100.00%), formatted with **two decimals**:

1. Musala
2. Mont Blanc
3. Kilimanjaro
4. K2
5. Everest

**8. Tennis World Ranking**

Grigor Dimitrov’s next goal is climbing the ATP ranking.  
During the year he participates in a number of tournaments, earning points depending on his final stage:

* "W" → winner, 2000 points
* "F" → finalist, 1200 points
* "SF" → semifinalist, 720 points

Write a program that calculates:

* Total points after all tournaments
* Average points per tournament
* Percentage of tournaments won

**Input**

1. Number of tournaments – integer [1…20]
2. Starting points – integer [1...4000]
3. For each tournament: result – "W", "F", or "SF"

**Output**

Final points: {total points}

Average points: {average points per tournament}

{percentage won}%

* Average points: rounded down to nearest integer.
* Percentage: format with **two decimals**.