Lab: For Loops

1. Power of Number

Write a function to calculate **n^p**:

- Read **n** (the number) and **p** (the power)
- Print the result of **n** to the power of **p**

- Don't use **Math.pow()**, use loops

Examples

Input	Output
2 5	32

Input	Output
3 4	81

Input	Output
2.5 3	15.625

2. Multiplication Table

Print a **multiplication table** of size 10 for given integer **n**:

- Read an integer **n**
- Print **n**'s multiples in the format "**{n} x {i} = {result}**" for each **i** in the range [1…10]

Example

Input	Output
2	2 x 1 = 2 2 x 2 = 4 2 x 3 = 6 2 x 4 = 8 2 x 5 = 10 2 x 6 = 12 2 x 7 = 14

	2 x 8 = 16 2 x 9 = 18 2 x 10 = 20

3. Min and Max Number

Write a function to find the **biggest** and the **smallest** number

- Input:
  - Integer **n**: the count of numbers to be read
  - **n** floating-point numbers (as array)
- Finds and prints the **min** and the **max** number

Example

Input	Output
3 10 350 50	Min number: 10 Max number: 350

4. Vowel Sum

Write a function to **sum n vowels**, using the weights below:

- Receives:
  - Integer **n**: the count of characters
  - **n characters** (as array)
- For each vowel add its weight to the sum

character	a	e	i	o	u
weight	1	2	3	4	5

Example

Input	Output
3 i x u	8

5. Zig Zag Sum

Write a function to calculate the **zig-zag sum** for given numbers:

- Receives a number **n** and **n** integers (as array)
- For every **odd** line **add** the number to the result
- For every **even** line **subtract** the number from the result

Examples

Input	Output
2 10 -20	30

Input	Output
3 10 20 5	-5

6. Division to 2, 3 and 4

Write a function to find **statistics about division to 2, 3 and 4**:

- Receives a count **n** and **n** integers (as array)
- Finds in **percentages** how many of these integers can divide without a remainder to **2**, **3** and **4**
- Prints the percentages, formatted to the **second** decimal digit

Examples

Input	Output
3 3 6 9	33.33% 100.00% 0.00%

Input	Output
3 4 6 3	66.67% 66.67% 33.33%

7. Rollercoaster

Write a **rollercoaster simulator**:

- Receives rollercoaster **capacity**, **minimum age required**, **number of people** on the queue and an **array that contains the age of each person**
- If the person’s age is within minimum age required, they will occupy a space on the rollercoaster, otherwise disregard that person and move on who is the next on queue.
- If all capacity is occupied, print "**The rollercoaster departures**"
- In another case, print "**Waiting...**"

Examples

Input	Output
2 10 3 15 12 8	The rollercoaster departures

Input	Output
5 11 0	Waiting...

8. Equal Pairs

Write a function to **check the sums of pairs for differences**:

- Receive **n**, followed by **n** pairs of numbers (2 * **n** integers)
- Print "**Yes, value={sum}**", if the sum of all pairs is the same
- Otherwise, print "**No, maxdiff={diff}**", where **diff** is the maximal difference in the sum between two sequential pairs

Examples

Input	Output
2, -1 0 0 -1	Yes, value=-1

Input	Output
2, 5 6 3 7	No, maxdiff= 1