

GE23131-Programming Using C-2024

1 2 3

Finish review

Question 1
Correct
Marked out of 1.00
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In this challenge, we're going to use loops to help us do some simple math. Check out the Tutorial tab to learn more.

Given an integer, n , print its first 10 multiples. Each multiple $n \times i$ (where $1 \leq i \leq 10$) should be printed on a new line in the form: $n \times i = \text{result}$.

A single integer, n .

Constraints

 $2 \leq n \leq 20$

Output Format

Print **10** lines of output; each line i (where $1 \leq i \leq 10$) contains the **result** of $n \times i$ in the form:

$$n \times i = \text{result.}$$

Sample Input

2

Coding: Attempt review | REC-CIS - Google Chrome

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REC-CIS

Sample Output

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

Answer: (penalty regime: 0 %)

```
1 #include<stdio.h>
2 int main(){
3     int a;
4     scanf("%d",&a);
5     for (int i=1;i<=10;i++){
6         printf("%d x %d = %d\n",a,i,a*i);
7     }
8 }
```

Operators and Expressions

No more attempts are allowed

TCS

14:28
14-01-2025

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REC-CIS

	Input	Expected	Got	
✓	2	$2 \times 1 = 2$ $2 \times 2 = 4$ $2 \times 3 = 6$ $2 \times 4 = 8$ $2 \times 5 = 10$ $2 \times 6 = 12$ $2 \times 7 = 14$ $2 \times 8 = 16$ $2 \times 9 = 18$ $2 \times 10 = 20$	$2 \times 1 = 2$ $2 \times 2 = 4$ $2 \times 3 = 6$ $2 \times 4 = 8$ $2 \times 5 = 10$ $2 \times 6 = 12$ $2 \times 7 = 14$ $2 \times 8 = 16$ $2 \times 9 = 18$ $2 \times 10 = 20$	✓

Passed all tests! ✓

Question 2
Correct
Marked out of 1.00
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A nutritionist is labeling all the best power foods in the market. Every food item arranged in a single line, will have a value beginning from 1 and increasing by 1 for each, until all items have a value associated with them. An item's value is the same as the number of macronutrients it has. For example, food item with value 1 has 1 macronutrient, food item with value 2 has 2 macronutrients, and incrementing in this fashion.

The nutritionist has to recommend the best combination to patients, i.e. maximum total of macronutrients. However, the nutritionist must avoid prescribing a particular sum of macronutrients (an 'unhealthy' number), and this sum is known. The nutritionist chooses food items in the increasing order of their value. Compute the highest total of macronutrients that can be prescribed to a patient, without the sum matching the given 'unhealthy' number.

Here's an illustration:

Windows Taskbar

Search: Type here to search

Taskbar Icons: File Explorer, Microsoft Edge, WhatsApp, Instagram, Telegram, Google Chrome, Firefox, VS Code, TCS

System Tray: 14:28, 14-01-2025, ENG

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REC-CIS

Given 4 food items (hence value: 1,2,3 and 4), and the unhealthy sum being 6 macronutrients, on choosing items 1, 2, 3 -> the sum is 6, which matches the 'unhealthy' sum. Hence, one of the three needs to be skipped. Thus, the best combination is from among:

- $2 + 3 + 4 = 9$
- $1 + 3 + 4 = 8$
- $1 + 2 + 4 = 7$

Since $2 + 3 + 4 = 9$, allows for maximum number of macronutrients, 9 is the right answer.

Complete the code in the editor below. It must return an integer that represents the maximum total of macronutrients, modulo $1000000007 (10^9 + 7)$.

It has the following:

- n : an integer that denotes the number of food items
- k : an integer that denotes the unhealthy number

Constraints

- $1 \leq n \leq 2 \times 10^9$
- $1 \leq k \leq 4 \times 10^{15}$

Input Format For Custom Testing

The first line contains an integer, n , that denotes the number of food items.

The second line contains an integer, k , that denotes the unhealthy number.

Operators and Expressions

No more attempts are allowed

Windows

Type here to search

Coding: Attempt review | REC-CIS - Google Chrome

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REC-CIS

Sample Input 0

2
2

Sample Output 0

3

Explanation 0

The following sequence of $n = 2$ food items:

- Item 1 has 1 macronutrients.
- $1 + 2 = 3$: observe that this is the max total, and having avoided having exactly $k = 2$ macronutrients.

Sample Input 1

2
1

Sample Output 1

Windows taskbar with search bar, icons, and system tray

Coding: Attempt review | REC-CIS - Google Chrome

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REC-CIS

		<p>2</p> <p>Explanation 1</p> <ol style="list-style-type: none">1. Cannot use item 1 because $k = 1$ and $sum \equiv k$ has to be avoided at any time.2. Hence, max total is achieved by $sum = 0 + 2 = 2$. <p>Sample Case 2:</p> <p>Sample Input For Custom Testing</p> <p>Sample Input 2</p> <p>3 3</p> <p>Sample Output 2</p> <p>5</p> <p>Explanation 2</p>
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Operators and Expressions

No more attempts are allowed.

Windows taskbar: Type here to search, TCS, 14:29, 14-01-2025

Explanation 2

Answer: (penalty regime: 0 %)

	Input	Expected	Got
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REC-CIS

	Input	Expected	Got	
✓	2 2	3	3	✓
✓	2 1	2	2	✓
✓	3 3	5	5	✓

Passed all tests! ✓

Question 3

Correct

Marked out of 1.00

Flag question

Determine all positive integer values that evenly divide into a number, its factors. Return the p^{th} element of your list, sorted ascending. If there is no p^{th} element, return 0.

For example, given the number $n = 20$, its factors are $(1, 2, 4, 5, 10, 20)$. Using **1-based indexing** if $p = 3$, return 4. If $p > 6$, return 0.

Complete the code in the editor below. The function should return a long integer value of the p^{th} integer factor of n .

It has the following:

n : an integer

p : an integer

Constraints

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Coding: Attempt review | REC-CIS - Google Chrome

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REC-CIS

- $1 \leq n \leq 10^{15}$
- $1 \leq p \leq 10^9$

Input Format for Custom Testing

Input from stdin will be processed as follows and passed to the function.

The first line contains an integer n , the number to factor.

The second line contains an integer p , the 1-based index of the factor to return.

Sample Input 0

```
10
3
```

Sample Output 0

```
5
```

Explanation 0

Factoring $n = 10$ we get $\{1, 2, 5, 10\}$. We then return the $p = 3^{\text{rd}}$ factor as our answer.

Sample Input 1

Operators and Expressions

No more attempts are allowed

Windows taskbar with search bar and icons for File Explorer, WhatsApp, Instagram, and others.

System tray showing date and time: 14:29, 14-01-2025.

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REC-CIS

10

5

Sample Output 1

0

Explanation 1

Factoring $n = 10$ we get $\{1, 2, 5, 10\}$. There are only 4 factors and $p = 5$. We return 0 as our answer.

Sample Input 2

1

1

Sample Output 2

1

Explanation 2

Factoring $n = 7$ we get $\{7\}$. We then return the $p = 7^{\text{st}}$ factor as our answer.

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Coding: Attempt review | REC-CIS - Google Chrome

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REC-CIS

```
1 #include<stdio.h>
2 int main(){
3     long int n;
4     int p,c=0;
5     int l[10000];
6     scanf("%ld\n%ld",&n,&p);
7     for(long int i=1; i<=n; i++){
8         if(n%i==0){
9             l[c++]=i;
10        }
11    }
12    if(c>p){
13        printf("%d",l[p-1]);
14    }
15    else printf("0");
16 }
```

	Input	Expected	Got	
✓	10 3	5	5	✓
✓	10 5	0	0	✓
✓	1 1	1	1	✓

Operators and Expressions

No more attempts are allowed

Type here to search