1. **Sum range 1: What is the output of this code?**

   print(sum(range(0, 7)))

   A. 15
   B. 21
   C. 28
   D. 36

2. **Check even/odd-**

Problem Description

Write a program to input an integer from user and print **1** if it is odd otherwise print **0**.

Problem Constraints

1 <= N <= 1000000

Input Format

One line containing an integer **N**.

Output Format

Print either 1 or 0 as per the question.

Example Input

Input 1:

5

Input 2:

1000

Example Output

Output 1:

1

Output 2:

0

3. **Divisible by 2 numbers-**

Problem Description

Take an integer **A** as input. You have to tell whether **A** is divisible by **both 5 and 11** or not.

Problem Constraints

1 <= **A** <= 10^9

Input Format

The input contains a single integer **A**.

Output Format

Print 1 if **A** is divisible by both 5 and 11, else print 0.

Example Input

Input 1:

55

Input 2:

22

Example Output

Output 1:

1

Output 2:

0

Example Explanation

Explanation 1:

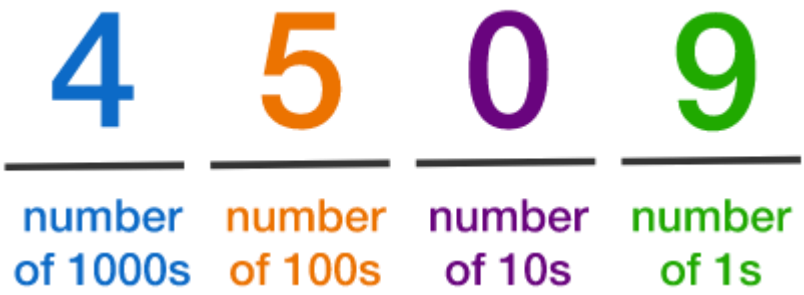
55 is divisible by both 5 (5 * 11 = 55) and 11 (11 * 5 = 55).

Explanation 2:

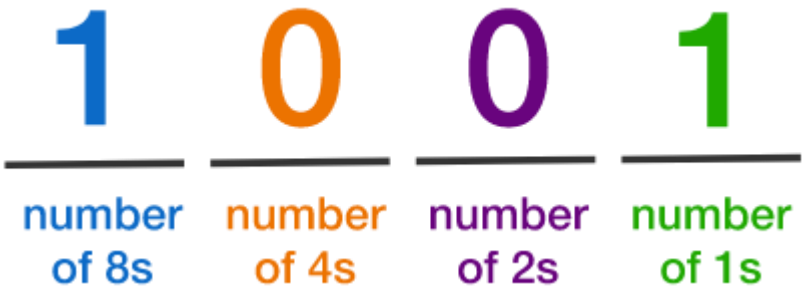
22 is divisible by 11 (11 * 2 = 22),but it is not divisible by 5.

4. **Binary to Decimal**

In our base-10 system, the positions (from right to left) correspond to the "number of 1s", "number of 10s", "number of 100s", and so on, where the value of each position is **10 times** the previous one.



Binary, or base 2, uses only the digits 0 and 1. Each position corresponds to the "number of 1s", "number of 2s", "number of 4s", "number of 8s", and so on. The value of each position is **2 times** the previous one.



The number mentioned above if expressed in base 10 will give 8 + 1 = 9 since there is one 8 and one 1.

What is the value (in base 10) of the binary number 10000?

A. 12
B. 14
C. 16
D. 20
E. 8

5. **Larger Binary – 1:**

Which binary number out of the options given below is larger?
A. 1111
B. 10000
C. Both are having the same value

6. **Binary Ending in 1-**

   If a binary number ends in 1 (like 1001 or 111011), then it is…
   A. Always Odd
   B. Always Even
   C. May be odd or may be even, needs to check other digits as well.

7. **Binary Multiply –**

What is the result (in binary) of multiplying the binary number 1100 by the binary number 10?

a. 1110

b. 1111

c. 11000

d. 11111

Note: Type the binary number (1110 or 1111 etc.), NOT the option (a or b etc) in the answer.

8. **Binary Multiply – 1:**

   What is the result (in binary) of making the binary number 1001 double?

   A. 1010
   B. 11000
   C. 10100
   D. 10010

9. **Larger Logarithm – Which of these two numbers is larger?**

   A. $\log_{10}(1000)$
   B. $\log_{2}(9)$
   C. Both are equal

10. Logarithm and Digits –

Here're some base-10 logarithms:

$\log_{10}(1000) = 3$

$\log_{10}(49323) \approx 4.69$

$\log_{10}(100000) = 5$

$\log_{10}(333333) \approx 5.52$

Which statement is true?

A. The base-10 log of a number, if rounded down, is the number of digits of the number.
B. The base-10 log of a number, if rounded up, is 1 more than the number of digits of the number.
C. The base-10 log of a number, if rounded down, is 1 less than the number of digits of the number.
D. None of the above.

11. Logarithm Not Integer - The value of $\log_2(7)$ is _____.

A. Between 1 & 2
B. Between 2 & 3
C. Between 3 & 4
D. Between 4 & 5

P. T. O.

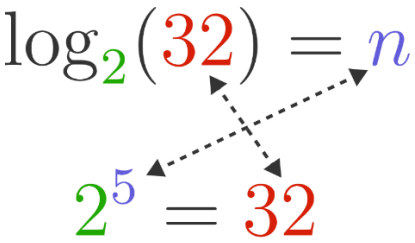
12. Logarithm 1 –

The **base** of an exponent is the number being multiplied. For example, in the power 3^5, 3 is the base.

Given a base and the result after raising it to a power, how do we find the power that was used?

Essentially, we would like to take the inverse of the **exponential** function.

This inverse function is a **logarithm** written as "log":



Calculating the logarithm $\log_2(32)$ is the same as asking,

"2 raised to what power is 32?" => That is 5.

What is $\log_6(36^2)$?

A. 1
B. 2
C. 3
D. 4
E. 6