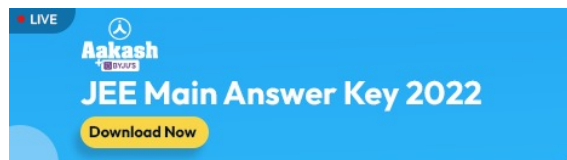


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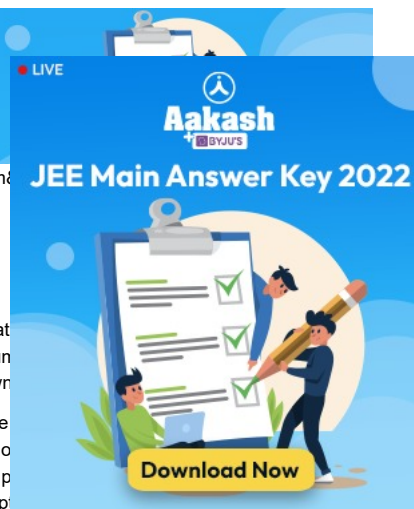
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Predecessor and Successor

Predecessor and Successor are the two terms in Mathematics that and sequence of whole numbers (<https://byjus.com/math/whole-numbers/>) before numbers (that appear just before) and the successor is known

Successor and predecessor are used for the terms/numbers that are respectively. For example, in the series 1, 2, 3, 1 is the predecessor of 2 and 3 is the successor of 2. In this article, we are going to learn about the definitions of successor and predecessor and how to find them. Class 6 students can learn this topic from the chapter

What is Predecessor?

As discussed in the introduction, a predecessor is a value that comes right before/immediate before/just before a particular value. Suppose a value is x (where x belongs to any whole number), then the predecessor of x will be $x-1$. Thus, to find the predecessor of any value we have to subtract the given value from 1.

Examples of Predecessor

- If $x = 5$, then predecessor of 5 is $5-1 = 4$
- If $x = 10$, then predecessor of 10 is $10-1 = 9$
- If $x = 20$, then predecessor of 20 is $20-1 = 19$
- If $x = 50$, then predecessor of 50 is $50-1 = 49$
- If $x = 100$, then predecessor of 100 is $100-1 = 99$

Hence, the predecessor of any whole number is one less than the original number.

What is Successor?

A successor is a term that comes right after a particular number or term. Suppose a value is n (where n belongs to any whole number), then the successor of n is $n+1$. Successor and predecessor are just after, immediately after, next number/next value.

Examples of Successor

- If $n = 5$, then successor of 5 is $5 + 1 = 6$



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- If $n = 10$, then successor of 10 is $10 + 1 = 11$
- If $n = 20$, then successor of 20 is $20 + 1 = 21$
- If $n = 50$, then successor of 50 is $50 + 1 = 51$
- If $n = 100$, then successor of 100 is $100 + 1 = 101$

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Therefore, by these examples, we can say, the successor of any whole number is one more than the original number.

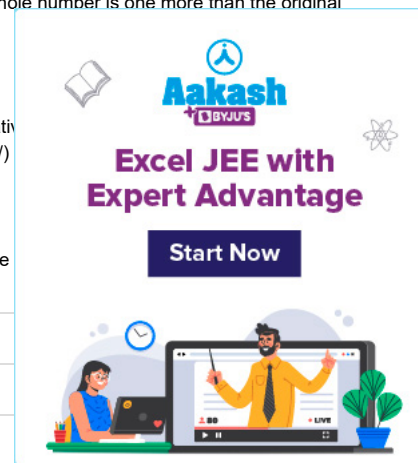
Predecessor and Successor of Integers

By the definition of integers, we know that any positive or non-negative integers. Or we can say, integers (<https://byjus.com/maths/integers/>) fractional numbers.

$$\mathbb{Z} = \{\dots, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, \dots\}$$

The predecessor and successor of integers will be one less and one few examples here:

Integer	Predecessor	
-10	$-10 - 1 = -11$	
-5	$-5 - 1 = -6$	
-1	$-1 - 1 = -2$	$-1 + 1 = 0$
0	$0 - 1 = -1$	
3	$3 - 1 = 2$	$3 + 1 = 4$
11	$11 - 1 = 10$	$11 + 1 = 12$



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Note: Successor and predecessor are applicable only for perfect numbers (such as natural or whole numbers) but not for fractions.

How to Find Successor and Predecessor?

To evaluate the successor and predecessor of any value, we have to apply the basic method of addition and subtraction, respectively. For the successor, we need to add 1 to the given number. Similarly, for the predecessor, we have to subtract 1 from the given number. Finding a successor and predecessor is very easy and quick.

- **Successor = Given number + 1**
- **Predecessor = Given number - 1**

We have provided solved examples here to understand better, how to find predecessor and successor.

Difference Between Successor and Predecessor

Successor	Predecessor
It is the number that comes just next to the original number.	It is the number that comes just before the original number.
Successor \rightarrow Original number + 1	Predecessor \rightarrow Original number - 1

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Example:

Successor of 55 \rightarrow 56

Example: CBSE Previous Year Question Papers

Predecessor of 55 \rightarrow 54

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Solved Examples on Successor and Predecessor

Q.1: Find the successor of the following numbers.

- 12
- -12
- -84
- 90
- 150
- 45
- 89

Solution: The required successors are:

- $12 \rightarrow 12 + 1 = 13$
- $-12 \rightarrow -12 + 1 = -11$
- $-84 \rightarrow -84 + 1 = -83$
- $90 \rightarrow 90 + 1 = 91$
- $150 \rightarrow 150 + 1 = 151$
- $45 \rightarrow 45 + 1 = 46$
- $89 \rightarrow 89 + 1 = 90$

Q.2: Find the predecessor of the following numbers:

- -14
- -80
- 45
- -8
- 20
- 199
- 56

Solution: The predecessors are:

- $-14 \rightarrow -14 - 1 = -15$
- $-80 \rightarrow -80 - 1 = -81$
- $45 \rightarrow 45 - 1 = 44$

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- $-8 \rightarrow -8 - 1 = -9$
- $20 \rightarrow 20 - 1 = 19$
- $199 \rightarrow 199 - 1 = 198$
- $56 \rightarrow 56 - 1 = 55$

Q.3: Write the predecessor and successor of:

1. 19
2. 1997
3. 12000
4. 49
5. 100000

Solution:

A. 19

Predecessor of 19 $\rightarrow 19 - 1 = 18$

Successor of 19 $\rightarrow 19 + 1 = 20$

B. 1997

Predecessor of 1997 $\rightarrow 1997 - 1 = 1996$

Successor of 1997 $\rightarrow 1997 + 1 = 1998$

C. 12000

Predecessor of 12000 $\rightarrow 12000 - 1 = 11999$

Successor of 12000 $\rightarrow 12000 + 1 = 12001$

D. 49

Predecessor of 49 $\rightarrow 49 - 1 = 48$

Successor of 49 $\rightarrow 49 + 1 = 50$

E. 100000

Predecessor of 100000 $\rightarrow 100000 - 1 = 99999$

Successor of 100000 $\rightarrow 100000 + 1 = 100001$

Q.4: What is the successor of the largest 3 digit number?

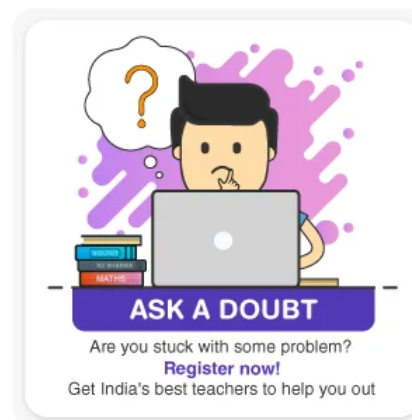
Answer: The largest 3 digit number is 999. Therefore, the successor of 999 is 1000.

Q.5: What is the predecessor of the smallest 3-digit number?

Answer: The smallest 3-digit number is 100, therefore the predecessor of 100 is 99.

Practice Questions for Class 6

1. What is the successor of 7148, 8950, 7620, 12499?
2. What is the predecessor of 321, 4567, 9876, 765?
3. What is the successor of the smallest 4-digit number?
4. What is the predecessor of the greatest 4-digit number?
5. Draw the number line and mention the predecessor and successor of the following numbers: 5, 12, 15, 0



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What is successor in Maths with example?

In Maths successor of any number is the value that comes immediate after the original number. If n is a number, then its successor is $n+1$. For example, successor of 65 is 66.

What is predecessor in Maths with example?

In Maths, a predecessor of any number is the value that comes immediate before the original number. If x is a number, then its predecessor is $x - 1$. For example, the predecessor of 20 is 19.

What is the successor of 15?

The successor of 15 is 16.

$$15 + 1 = 16$$

What is the successor of 9999?

The successor of 9999 is 10000.

$$9999 + 1 = 10000$$

What is the predecessor of 399?

The predecessor of 399 is 398.

$$399 - 1 = 398$$

What is successor of -1?

The successor of -1 is 0 because $-1 + 1 = 0$.

Is there any natural number that has no predecessor?

Yes, 1 is the natural number that has no predecessor, since we know the series of natural numbers starts from 1.

Is there any natural number which has no successor?

Every natural number has a successor, because there are infinite natural numbers and no last natural number. For example, the successor of 100000000 is 100000001.



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