

INTEGERS

The Philomath Club

What are integers ?

Do you know what counting numbers are ?

They are -> 1, 2, 3, 4, 5, 6, ...

Now, integers are counting numbers and some more numbers. What are these some more numbers ?

....., -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5,...

The above written numbers are all integers. Interesting, right ?

So, basically integers are all the counting numbers, 0 and counting numbers with a negative sign.

How is **-2** different from **2** ?

So the answer to above question is -

When you subtract 3 from 5, what do you get ?

It is just : $5 - 3 = 2$.

Now what if I ask - when you subtract **5 from 3**, what do you get ?

The above statement means : $3 - 5$.

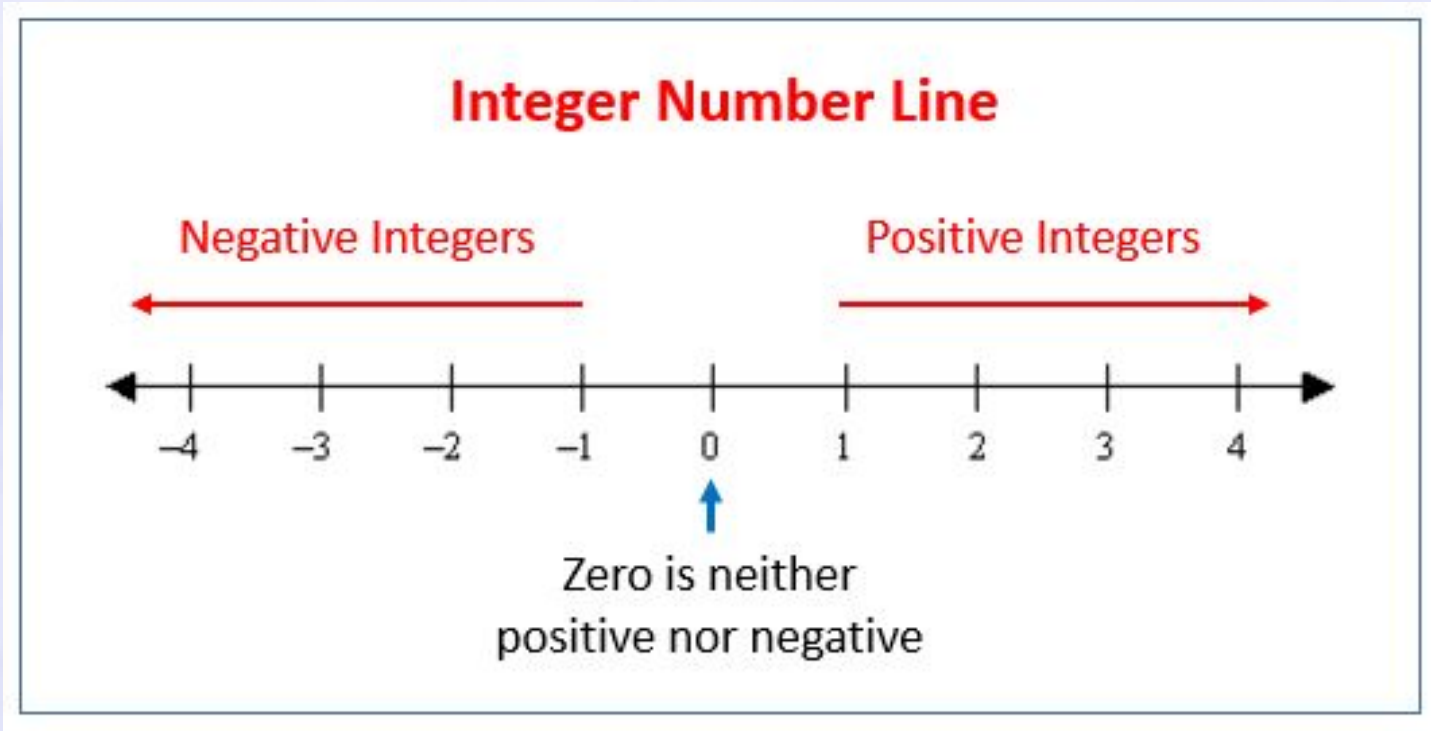
So what do we do in this case? We define the negative numbers. Let's see some more properties of it first and then come back to this :D

How do you compare negative numbers ?

Everyone knows that $5 > 3$, or $7 > 6$.

But which one among **-3** and **-5** is greater?

INTEGER NUMBER LINE



Which of the following is greater ?

2 or 3

Which of the following is greater ?

0 or ***7***

Which of the following is greater ?

3 or -1

Which of the following is greater ?

1 or -1

Which of the following is greater ?

0 or ***-5***

Which of the following is greater ?

-3 or -2

Which of the following is greater ?

-7 or -5

Addition in negative integers

When we say - add 5 and 2, we basically start from 5 on number line and go two steps ahead, to get 7. So, we say that $5 + 2 = 7$.

Now what to do if someone asks - add 5 and -2 ?

So in this case we go **-2** steps ahead, but how to deal with this minus ?

It just means reverse the direction. So you go 2 steps behind, and get $5 + (-2) = 3$.

Let's practice this now.

ADD the following two numbers

3 and 7

ADD the following two numbers

2 and -5

ADD the following two numbers

3 and -4

ADD the following two numbers

-4 and -5

ADD the following two numbers

3 and -3

ADD the following two numbers

-8 and -5

Subtraction in negative numbers

When you are asked to subtract 4 from 7. What do you do ?

You select 7 on number line and go back (to the left) 4 steps and get the answer 3.

Now what do you do when you are asked to subtract 4 from - 7, or - 4 from 7?

Now to subtract 4 from - 7, you choose -7 on the number line and again go back (left) 4 steps and get the answer as - 11.

But now what about -> subtract -4 from 7.

Here you do the same thing, pick 7 and go back **-4** steps, and as told - will reverse the direction, so instead of going to left you go right 4 steps.

So the answer comes to be 11.

Let's see some examples.

SUBTRACT

3 from **8**

SUBTRACT

3 from **-8**

SUBTRACT

-2 from **7**

SUBTRACT

4 from **-6**

SUBTRACT

-3 from **-2**

SUBTRACT

-3 from **-3**