A number line is similar to a ruler or measuring stick. It can be divided into pieces, and it can go both directions from zero to show positive and negative integers.

A number line is especially helpful when you’re trying to add or subtract negative integers.

Let’s say we want to solve this problem: \(-4 + 6\)

- Our first step is to make a number line that goes in both directions from zero.
- We put a dot on \(-4\) to show that is the first number.

Our next step is to see whether the problem asks us to add or divide. The + shows this is an addition problem.

- Any time we add a positive integer, we move to the right, or up, on the number line.
- We start at \(-4\) and move to the right six places.
- We land on 2. We can also call this number + 2, but for positive integers, you don’t need to put the plus sign.

\(-4 + 6 = 2\)

Notice what happens when we solve: \(2 - 6\)

- In this case, we start with our dot on 2. Because the problem asks us to subtract, we move to the left, or down the number line, six places.
- Where do we land?
Now let’s try a problem where we start with a negative integer and then subtract: -1 - 8

- Our first step is to make a number line.
- We want to leave plenty of space to the left of zero since we will be starting with a negative integer and then subtracting, which means moving to the left.
- We put a dot on -1 to show that is the first number.
- Next, because we are subtracting, we move 8 spots to the left, or down, on the number line.
- We land at -9, so that is our answer!

It’s helpful to know that the above problem, -1 - 8, is the same as -1 + (-8). In other words, if we are asked to add a negative integer, that means we subtract, or go to the left. The answer will still be -9.

For our last example, let’s subtract a negative integer from a positive integer: 2 - (-3)

- Notice that it looks like there are two minus signs right next to each other.
- These two cancel each other out. In other words, when you subtract a negative integer, you add instead. So the problem becomes 2 + 3.
- We probably don’t even need the number line to solve this one. 2 + 3 = 5!

To sum up:

⇒ Add a positive integer by moving to the right on the number line.
⇒ Add a negative integer by moving to the left on the number line.
⇒ Subtract an integer by adding its opposite.

For More on This Topic:

◊ https://www.youtube.com/watch?v=Dfytkh_IYME&t=169s
◊ https://www.youtube.com/watch?v=4dwbHgXd8r8