

Negative Numbers

A GUIDE

What lives to the left of zero — and how to walk the number line like a pro

There's a whole world below zero

Picture a freezing winter morning. The thermometer shows 0 degrees, and then it gets even colder. The temperature doesn't just stop — it keeps going down, to -1 , -2 , -3 . Those numbers with a minus sign in front are called negative numbers.

You've probably ridden in an elevator that has floors below the ground, too. Ground level is 0, the parking level below it is -1 , and the one under that is -2 . Negative numbers are just the numbers that live below zero — or, on a number line, to the LEFT of zero.

Here's a neat pattern: every positive number has a negative twin the same distance from zero. 3 is three steps to the right of zero, and -3 is three steps to the left. Zero sits exactly in the middle, like a mirror.



Which number is bigger? Look left and right

With positive numbers, bigger digits usually mean bigger numbers. Negatives flip that feeling. Is -7 bigger than -2 ? It looks bigger — 7 is more than 2 — but -7 is actually LESS than -2 .

Why? Think about temperature: -7 degrees is colder than -2 degrees, so it's the smaller number. Or use the number line: -7 sits farther to the left than -2 . The rule that never fails is this — on a number line, the number farther to the LEFT is always smaller.

So don't compare the digits. Compare the positions. Left means less, every single time.



Worked example Put these numbers in order from smallest to largest: 2, -5 , -1 .

1. Picture all three on a number line: -5 is far left, -1 is just left of zero, and 2 is right of zero.
2. The farthest left number is the smallest, so -5 comes first.
3. Next comes -1 , because it is still left of zero but closer to it.
4. The number 2 is right of zero, so it is the largest.

Answer: $-5, -1, 2$

Adding moves you right, subtracting moves you left

Here's the key move for doing math with negatives: turn every problem into a walk. Start standing on the first number. Adding means walking to the RIGHT. Subtracting means walking to the LEFT.

So $-4 + 6$ means: stand on -4 , then take 6 steps to the right. And $2 - 7$ means: stand on 2, then take 7 steps to the left. You'll cross zero along the way — that's fine! Zero is just another spot on the path, not a wall.

This one picture replaces a pile of rules. Any time you're unsure, imagine your feet on the line and ask: which way am I walking, and how many steps?



Worked example What is $-4 + 6$?

1. Start standing on -4 .
2. Adding 6 means taking 6 steps to the right.
3. Count the steps: $-3, -2, -1, 0, 1, 2$.

4. You land on 2.

Answer: 2

How far apart? Distance is a step count

One more power move: finding the distance between two numbers. Distance means how many steps it takes to walk from one to the other — and steps are always counted as a positive number, no matter which direction you walk.

When one number is negative and the other is positive, there's a shortcut: walk to zero first, then keep going. From -3 to 5 , you take 3 steps to reach zero, then 5 more steps to reach 5. That's $3 + 5 = 8$ steps in total.

This shows up in real life all the time: if it was -3 degrees at dawn and 5 degrees at lunch, the temperature climbed 8 degrees.



Worked example What is the distance between -3 and 5 ?

1. From -3 , walk right to zero: that is 3 steps.
2. From zero, keep walking right to 5 : that is 5 more steps.
3. Add the two walks: $3 + 5 = 8$.

Answer: 8

Remember

- ★ On a number line, the number farther to the LEFT is always the smaller one — even when both numbers are negative.
- ★ A negative number that is close to zero (like -1) is bigger than one far from zero (like -9) — think of which temperature is warmer.
- ★ Turn every add or subtract into a walk: adding steps right, subtracting steps left, and zero is just a spot you can walk across.
- ★ To find the distance between a negative number and a positive number, add each one's distance to zero.

Now you try

- 1) Which temperature is colder: 4 degrees or -4 degrees?
Answer: _____
- 2) Which number is smaller: -7 or -2 ?
Answer: _____
- 3) The temperature is 3 degrees and then drops 5 degrees. What is the new temperature?
Answer: _____
- 4) What is $-4 + 6$?
Answer: _____
- 5) What is $2 - 7$?
Answer: _____
- 6) An elevator is at floor -2 (two floors below ground) and goes up 6 floors. What floor is it on now?
Answer: _____
- 7) What is the distance between -3 and 5 on the number line?
Answer: _____
- 8) At midnight it was -6 degrees; by noon it was 4 degrees. How many degrees did the temperature rise?
Answer: _____

Answers — check yourself

1. -4 degrees
2. -7
3. -2 degrees
4. 2
5. -5
6. Floor 4
7. 8
8. 10 degrees