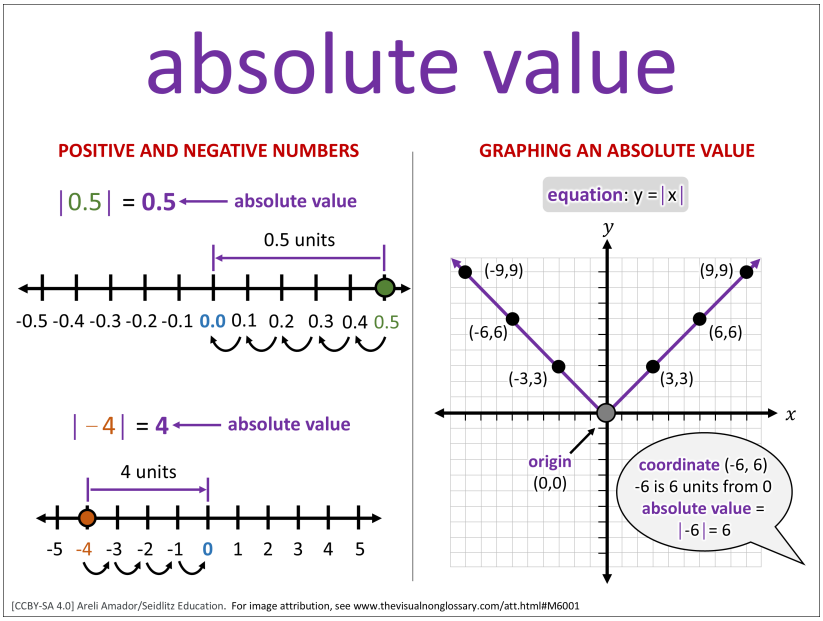
The Visual Non-Glossary™

Understanding Absolute Value

The purpose for reading is to figure out what absolute value means and how a number line and the idea of distance can help us understand it.

Pay Attention To:

- What absolute value means
- How a number and its opposite are shown on a number line
- How far numbers are from zero
- How absolute value is written in math
- How absolute value compares to negative and positive numbers



The **absolute value** of a number means how far it is from zero. It does not matter if the number is negative or positive. What matters is the distance. For example, –4 and 4 are both 4 spaces from zero. So, their **absolute values** are the same.

We show **absolute value** using straight lines like this: |–4|. That means "the **absolute value** of –4." The answer is 4. The same is true for |4|.

Some people think **absolute value** and opposite numbers are the same. But they are not. Opposites have the same numbers but different signs. For example, –3 and 3 are opposites. Their **absolute values** are the same, but the numbers are different.

Even negative numbers have a distance from zero. **Absolute value** shows how far a number is from zero. It is about distance, not direction.

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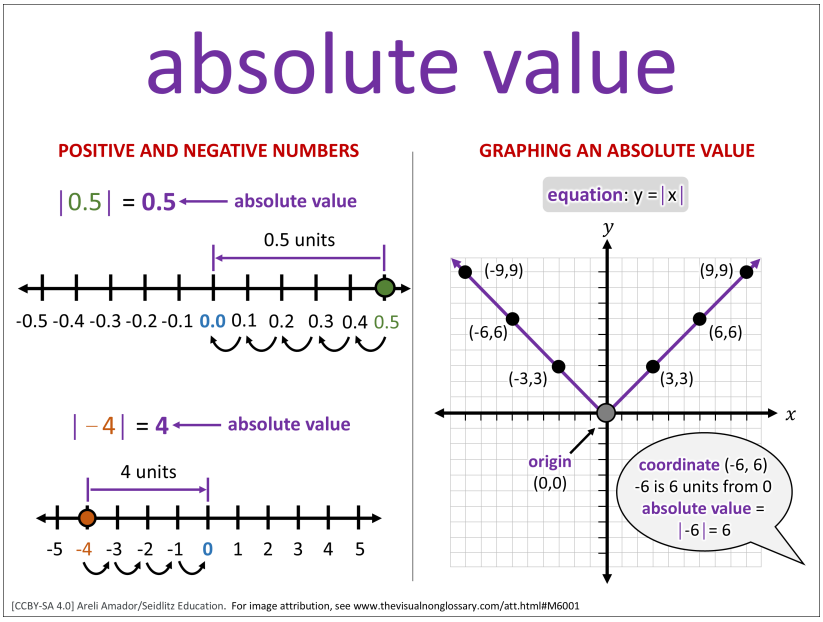

The **absolute value** of a number tells how far that number is from zero on a number line. It does not matter whether the number is positive or negative. What matters is the distance. For example, both –4 and 4 are four units away from zero, so their **absolute values** are the same.

We show **absolute value** using vertical bars. The symbol |–4| means "the absolute value of –4." Since –4 is four units from zero, |–4| equals 4. The same is true for |4|, which also equals 4.

Some students may think that **absolute value** and opposite numbers are the same. They are not. Opposite numbers have the same digits but different signs, like –3 and 3. Their **absolute values** are the same, but the numbers themselves are different. The **absolute value** shows only the distance, not the direction.

Even negative numbers have a distance from zero. Whether a number is positive or negative, its **absolute value** shows how far it is from zero on the number line. When we think about distance, we focus on how much space is between two points,

not the direction. This is why **absolute value** is often described in terms of distance.

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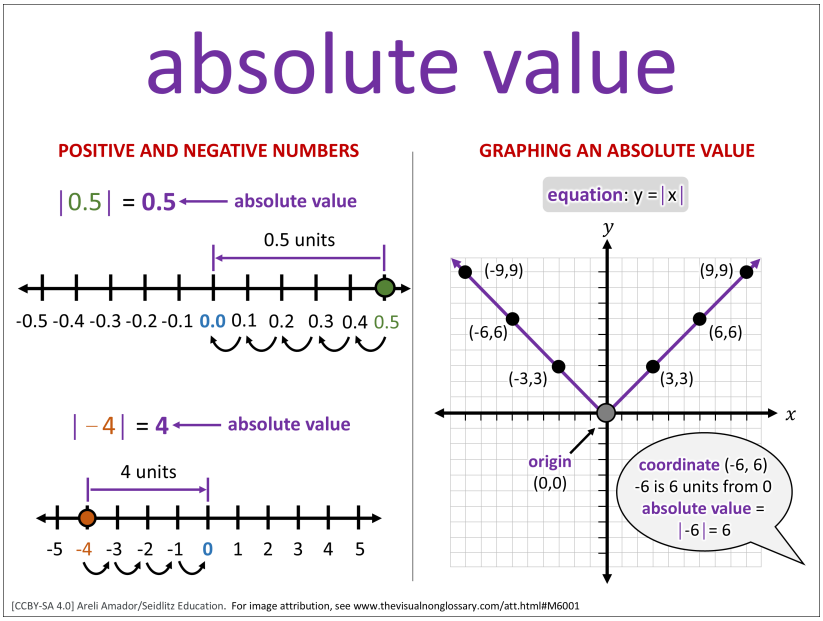

Absolute value refers to the distance between a number and zero on a number line. It measures how far a number is from zero, regardless of whether the number is positive or negative. For example, the numbers –4 and 4 are both four units away from zero, so their **absolute values** are the same.

Mathematically, we use vertical bars to represent **absolute value**. The expression |–4| means "the **absolute value** of –4," and its value is 4. Likewise, |4| is also equal to 4.

Students sometimes confuse **absolute value** with opposite numbers. While opposites like –3 and 3 have identical **absolute values**, they are not the same number. Opposites are about direction; **absolute value** is only about distance.

Negative numbers can still be measured by how far they are from zero. When we talk about **absolute value**, we are describing that distance. It is not about which way the number goes, but how far it is from zero.

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