



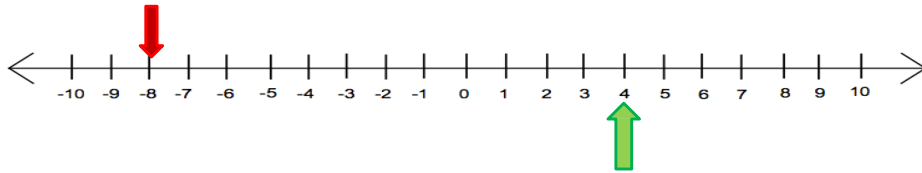
35 - Negative Numbers

Negative numbers are numbers that are **less than zero**.

Addition and Subtraction

Example : $-8 + 12$

When adding and subtracting with negative numbers, you should use a number line. Start at the first number given in the sum (here, it's -8).



Then, think about whether you are adding or subtracting your number. If you're adding the number needs to get bigger, so you move to the right each time. If you're subtracting, the number must need to be smaller, so you move left. We need to add 12 in our example, so add 8 to get back to zero, then add on in 1's until you get to 12...



The number you end up on is your answer!

$$-8 + 12 = 4$$

Be aware of circumstances where there are two signs in the middle of the sum:-

Example 1: $-5 + -3$

Where the signs in the middle are different, the resulting sum becomes a subtraction so the above example would be $-5 - 3$ which equals -8.

Example 2: $-6 - -3$

Where the signs in the middle are the same, the resulting sum becomes an addition so the above example would be $-6 + 3$ which equals -3.

Linked Prior Topics

Basic addition and subtraction
Basic multiplication and division

Vocabulary

Negative, positive, directed numbers

Multiplication and Division

Rules for **multiplying** with negative numbers:-

Positive x Positive = Positive
Negative x Negative = Positive
Positive x Negative = Negative
Negative x Positive = Negative

Examples

$$5 \times 4 = 20$$

$$-3 \times -2 = 6$$

$$10 \times -7 = -70$$

$$-8 \times 9 = -72$$

- ✓ Where the signs are the same, the product of the numbers is positive!
- ✓ Where the signs are different, the product of the numbers is negative!

Rules for **dividing** with negative numbers:-

Positive ÷ Positive = Positive
Negative ÷ Negative = Positive
Positive ÷ Negative = Negative
Negative ÷ Positive = Negative

Examples

$$20 \div 4 = 5$$

$$-6 \div -2 = 3$$

$$70 \div -7 = -10$$

$$-72 \div 9 = -8$$

- ✓ Where the signs are the same, the quotient of the numbers is positive!
- ✓ Where the signs are different, the quotient of the numbers is negative!

THINK! TWO NEGATIVES DO NOT ALWAYS MAKE A POSITIVE...

Linked Future Topics

All future topics