

Integers

The integers are the set of positive and negative whole numbers, or signed numbers. They can be represented on a number line, like the one below.



The absolute value of a number is the distance between that number and zero on the number line. Absolute value always returns a positive value because it represents distance.

Ex: $|3| = 3$ and $|-3| = 3$

Adding Integers

Same Sign- Add the absolute values and keep the sign the same!

(positive) + (positive) = (positive)

Ex: $6 + 4 = 10$

(negative) + (negative) = (negative)

Ex: $(-6) + (-4) = |-6| + |-4|$
 $= -10$

Different Sign- subtract and keep the sign of the bigger number

Ex: $(+6) + (-4) = 2$

Ex: $(-6) + (+4) = -2$

Subtracting Integers

Do not subtract integers! Instead, add the opposite!

Keep- keep the sign of the first number

Change- change the subtraction sign to an addition sign

Change- change the sign of the second number. If it is positive, change to negative. If it is negative, change to positive.

Ex: $6 - (-4)$

Keep change change

$6 + (+4)$

Ex: $(-6) - (+4)$

Keep change change

$(-6) + (-4)$

Then use the rules for adding.

Multiplying Integers

Same sign- Positive Solution

Multiply the numbers; the answer is positive.

Ex: $(-6) \times (-4) = 24$

Ex: $6 \times 4 = 24$

Different Sign- Negative Solution

Multiply the number; the answer is negative.

Ex: $(-6) \times (+4) = -24$

Ex: $(+6) \times (-4) = -24$

Dividing Integers

Same sign- Positive Solution

Divide the numbers; the answer is positive.

Ex: $24 \div 4 = 6$

Ex: $(-24) \div (-4) = 6$

Different sign- Negative Solution

Divide the numbers; the answer is negative.

Ex: $24 \div (-4) = -6$

Ex: $(-24) \div 4 = -6$