

Multiplying and Dividing with Integers

I have good news! 😊

Remember, these patterns:

++ stays +
-- becomes +

+- becomes -
-+ becomes -

They still apply, so your efforts to memorize them have not been in vain! 😊

Here's a quick review of how you can write a multiplication expression.

You already know 5×7 . Guess what? There are other ways you can write the same expression! 5×7 is the same as:

$5 * 7$ [This is old school. You've seen this before with our basic math facts drills.]

$5 \cdot 7$ [Yes, that dot **floating in the middle** also means multiplying.]

$(5)(7)$ [If you have numbers in brackets that are directly next to each other, it means you multiply them together.]

$5(7)$ [If you have a number "touching" the bracket of another number, it also means you multiply them together.]

As for division expressions, $35 \div 7$ is the same as $35/7$.

Okay, now that we got that out of the way.

Remember the patterns near the top of this page? Well...

When you are multiplying with integers:

a) When you have $(+) \times (+)$, the answer will be $(+)$.

For example: $(+2) \times (+7) = +14$ [You don't need brackets for your final answer.]

$$(+6) \cdot (+4) = +24$$

$$(+8)(+3) = +24$$

b) When you have $(-) \times (-)$, the answer will be $(+)$.

For example: $(-1) \times (-9) = +9$

$$(-5) \cdot (-3) = +15$$

$$(-4)(-2) = +8$$

- c) When you have $(-)\times(+)$ OR $(+)\times(-)$, the answer will be $(-)$. The order (e.g. $-+$ or $+ -$) does not matter.

For example: $(-2)\times(+5) = -10$

$$(+2)\times(-5) = -10$$

$$(-3)(+4) = -12$$

$$(+3)(-4) = -12$$

It's the same pattern when dividing!

When you are dividing with integers:

- a) When you have $(+)\div(+)$, the answer will be $(+)$.

For example: $(+40)\div(+5) = +8$

$$(+6)\div(+2) = +3$$

- b) When you have $(-)\div(-)$, the answer will be $(+)$.

For example: $(-10)\div(-5) = +2$

$$(-15)\div(-3) = +5$$

- c) When you have $(-)\div(+)$ OR $(+)\div(-)$, the answer will be $(-)$. The order (e.g. $-+$ or $+ -$) does not matter.

For example: $(-12)\div(+4) = -3$

$$(+12)\div(-4) = -3$$

Here are a couple of videos you can also watch about multiplying and dividing with integers.

The Organic Chemistry Tutor

<https://www.youtube.com/watch?v=c0eFZR2deYQ>

(The beginning part is a review. If you don't need that, jump 2 minutes and 30 seconds into the video.)

Math Antics

https://www.youtube.com/watch?v=K_tPbVPfHgk