



Simple Rules for Signed Numbers



MULTIPLICATION

$$(\#) \times (\#)$$

DIVISION

$$(\#) \div (\#)$$

There are two simple rules for multiplication and division of signed numbers:

Rule 1) When numbers with opposite signs are multiplied or divided, the answer will have a minus sign.

Example: $(-5)(2) = -10$

We multiplied -5 times $+2$.

The signs are opposite, so the answer is negative.

We abbreviate rule #1 this way:

<p>OPPOSITE SIGNS: $(-)(+) = (-)$ or $(+)(-) = (-)$</p>
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Rule 2) When numbers with the same signs are multiplied or divided, the answer will have a plus sign.

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

We divided -12 by -4 .

The signs are the same, so the answer is positive.

We abbreviate rule #2 this way:

<p>SAME SIGNS: $(-)(-) = (+)$ or $(+)(+) = (+)$</p>
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More examples on next page.





Simple Rules for Signed Numbers

Multiplication

OPPOSITE SIGNS

$$(+)(-) = (-)$$

$$(-)(+) = (-)$$

SAME SIGNS

$$(+)(+) = (+)$$

$$(-)(-) = (+)$$

Division

OPPOSITE SIGNS

$$(+)\div(-) = (-)$$

$$(-)\div(+) = (-)$$

SAME SIGNS

$$(+)\div(+) = (+)$$

$$(-)\div(-) = (+)$$

Note: Fractions are a form of division.

Examples:

$$(2)(-8) = -16$$

$$(-4)(0.6) = -2.4$$

$$-3x(-5) = 15x$$

$$-12y(-4x) = 48xy$$

$$-3(m-n) = -3m + 3n$$

$$0.2s(t-4) = 0.2st - 0.8s$$

$$2(x^2 - x + 3) = 2x^2 - 2x + 6$$

$$(-9)(-3) = 27$$

$$(10)(1) = 10$$

$$14r(2) = 28r$$

$$-y(-3.2) = 3.2y$$

$$5z^2(-7) = -35z^2$$

$$2x(20y) = 40xy$$

$$-w(-3x^3 - 5w) = 3wx^3 + 5w^2$$

Examples:

$$35\div(-7) = -5$$

$$-21z^2\div(-3) = 7z^2$$

$$\frac{-3x}{-2x} = \frac{3}{2}$$

$$4.2\div(-0.6) = -7$$

$$\frac{32x - 24y}{4} = 8x - 6y$$

$$\frac{-xy(z+1)}{-(z+1)} = xy$$

$$\frac{-5}{-10} = \frac{1}{2}$$

$$32\div(-8) = -4$$

$$\frac{-54}{9} = -6$$

$$-6.3\div 21 = -0.3$$

$$\frac{2(a-b)}{-(a-b)} = -2$$

$$\frac{-44x^2}{-11x} = 4x$$