Order of Operations

Apply the properties of Real numbers to simplify expressions.

Link to section in textbook

Now that we have the terminology for the different sets of numbers, we can review their properties. We'll start with the Real numbers first. Watch this video to review the properties of Real numbers. *Note: You won't be asked to define a property or know the property by name. However, you* ***will*** *need to know how to use the properties to simplify in order.*

We'll focus on Order of Operations here as many students were taught an order that **does not align with how most calculators/computers simplify expressions.**

Question 1 *Fill in the order below.*

P: $\boxed{\textit{Parentheses}}$

E: $\boxed{\textit{Exponents}}$

M/D: $\boxed{\textit{Multiplication}}$ $\boxed{\textit{Division}}$

A/S: $\boxed{\textit{Addition}}$ $\boxed{\textit{Subtraction}}$

Question 2 *Let's take a closer look at why M/D is written on the same level.*

$7 \div 5 \times 4 = \boxed{5.6}$

$7 \times \frac{1}{5} \times 4 = \boxed{5.6}$

Multiplying by $\frac{1}{5}$ *is the same as dividing by* $\boxed{5}$*. Now let's see what happens if we did multiplication first.*

$7 \div (5 \times 4) = \boxed{0.35}$

By changing everything to multiplication, we can see why it is so important to read from left-to-right when operations are on the same level!

Now try to simplify the more complicated expressions below.

Learning outcomes: Understand the different sets of numbers along with the properties of these sets.

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Question 3 *Simplify the expression* $18 - 13 \div 11 * 5 - (6 * 9)$.

-41.90909090909091

Question 4 *Simplify the expression* $4 - 5 \div 17 * 9 - (3 * 15)$.

-43.64705882352941

Question 5 *Simplify the expression* $12 - 11 \div 15 * 14 - (3 * 18)$.

-52.266666666666666