Friday, January 31, 2020

Review of Essential Skills and Knowledge

Part 1: BEDMAS with Fractions and Integers

1) Dealing with Fractions

Remember that a fraction represents a part of a whole. We need to be able to work with them in real life (measurement, recipes, etc.), as well as in this class because they are more accurate than decimals.

Expectation: You will report answers as fractional values unless there are decimals in the original question, or you are solving a real world problem where a decimal makes more sense (money!).

a) Multiplying and Dividing

To multiply, just multiply the tops & multiply the bottoms

ex/ $(^3/_5)(^{-1}/_2)$

$= \left(\frac{3}{5}\right)\left(\frac{-1}{2}\right)$

$= -\frac{3}{10}$

To divide: Flip the second and multiply.

ex/ $(^3/_4) \div (^{-2}/_3)$

$= \left(\frac{3}{4}\right)\left(-\frac{3}{2}\right)$

$= -\frac{9}{8}$

b) Adding and Subtracting

What do we need to do before we add/subtract fractions? Write them with a common denominator

Why do we need to do this? So that they each are expressed in terms of the same part of a whole.

ex/ $\frac{1}{3} + \frac{2}{5}$ CD = 15

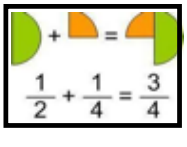
$= \frac{5}{15} + \frac{6}{15}$

$= \frac{11}{15}$

ex/ $\frac{3}{8} - \frac{4}{5} + \frac{1}{10}$ CD = 40

$= \frac{15}{40} - \frac{32}{40} - \frac{4}{40}$

$= -\frac{21}{40}$



2) BEDMAS - It Always Applies!

Brackets

Exponents

Division/**M**ultiplication

Addition/**S**ubtraction

- When you have something that appears to be a fraction, this indicates division. Simplify the numerator and denominator first, then divide!
- Work from left to right when you reach DM or AS.
- Be careful if you move numbers around. The sign in front of a term travels with it!!

$(-2)^2 = (-2)(-2)$

Practice Problems:

1) $\frac{(-2)^2(4) - 6}{(2)^2 + 1}$

$= \frac{(4)(4) - 6}{4 + 1}$

$= \frac{16 - 6}{5}$

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

2) $\frac{(-3)^2(4) + 4}{(-2)^3}$

$= \frac{(9)(4) + 4}{-8}$

$= \frac{36 + 4}{-8}$

$= \frac{40}{-8} = -5$

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

$(-2)(2)(-2)$

$= (4)(-2)$

$= -8$

CD: 84

3) $\frac{1}{3} - (\frac{-4}{7}) + \frac{3}{4}$

$= \frac{1}{3} \overset{\times 28}{\times} + \frac{4}{7} \overset{\times 12}{\times} + \frac{3}{4} \overset{\times 21}{\times}$

$= \frac{28}{84} + \frac{48}{84} + \frac{63}{84}$

$= \frac{139}{84}$

4) $\frac{(\frac{1}{2})(\frac{1}{4}) - \frac{3}{4}}{(\frac{2}{3})^2}$

$= \frac{\frac{1}{8} - \frac{3}{4}}{\frac{4}{9}}$

$= \left(\frac{1}{8} - \frac{6}{8}\right) \div \frac{4}{9}$

$= \left(-\frac{5}{8}\right) \times \frac{9}{4}$

$= -\frac{45}{32}$

$(\frac{2}{3})^2$

$= (\frac{2}{3})(\frac{2}{3})$

$= \frac{4}{9}$