Review #1

Tuesday, January 30, 2024   11:09 AM

Review of Math 9 – Part 1
Operations with integers and fractions

Integers

$-5, -2\text{million}.$

Whole numbers that are positive and negative *and neutral*

$(3, 7, 12000$

Zero

Order of operations *evaluating*

BEDMAS *solving.*

- Brackets
- Exponents
- Multiplication and division in the order they occur
- Addition and subtraction in the order they occur

_____Sum_____ is the result of addition   *ex* Sum of 3 and 5 is 8.

_____Difference_____ is the result of subtraction *ex* Difference of 8 and 3 is 5.

_____Product_____ is the result of multiplication *ex* Product of 3 and 5 is 15.

_____Quotient_____ is the result of division *ex* Quotient of 15 and 3 is 5.

Multiply/Divide:
$(+)(+)$ or $(-)(-) = +$
$(+)(-)$ or $(-)(+) = -$

Adding/Subtracting:
think of temperature.

ex $-8 + 3 = -5$

$12 - (-4) = 16$

Example 1: Without a calculator, evaluate. Show your work if necessary.

a) $(-1) + 3 = 2$

b) $4 - (-5) = 9$

c) $4 - 7 = -3$

d) $(-1) \times 3 = -3$

e) $(-4) \times (-5) = 20$

f) $4 \times (-7) = -28$

BEDMAS

g) $(-1) \times 3 - 5$

$= -3 - 5$

$= -8$

BEDMAS

h) $4^2 + (-5)$

$= 16 + (-5)$

$= 16 - 5$

$= 11$

BEDMAS

i) $2(4 - 7)$

$= 2 \cdot (-3)$

$= -6$

F & PC 10

Operations with fractions

1) <mark>Addition and subtraction</mark> of fractions   *create a common denominator*
   - Find a <mark>common denominator</mark>
   - For each fraction, multiply the numerator and denominator (top and bottom) by the same number
   - <mark>Add or subtract the numerators</mark> (tops)

2) **Multiplication of fractions**
   - Multiply the numerators together
   - Multiply the denominators together

   $$ex \quad \frac{1 \to 5}{2 \to 6} = \frac{5}{12}$$

3) **Division of fractions**
   - Rewrite in the form of multiplication
     - <mark>Multiply</mark> the <mark>reciprocal</mark> of the <mark>second fraction</mark>

   <mark>kiss 'n' flip</mark>

   kiss   *flip*

   $$ex \quad \frac{1}{2} \div \frac{5}{6} = \frac{1 \to 6}{2 \to 5} = \frac{6 \div 2}{10 \div 2} = \boxed{\frac{3}{5}}$$
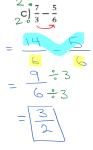
Simplifying fractions

A fraction is in simplest form when the numerator and the denominator are as small as possible. To reduce a fraction to simplest form divide the numerator and denominator by the same number.

Example 2: Evaluate and simplify is necessary.

a) $\frac{1}{5} + \frac{3}{5} = \boxed{\frac{4}{5}}$

b) $\frac{3 \bullet 1}{3 \bullet 5} + \frac{4 \bullet 5}{3 \bullet 5}$

$= \frac{3}{15} + \frac{20}{15}$

$= \boxed{\frac{23}{15}}$

c) $\frac{2 \bullet 7}{2 \bullet 3} - \frac{5}{6}$

$= \frac{14}{6} - \frac{5}{6}$

$= \frac{9 \div 3}{6 \div 3}$

$= \boxed{\frac{3}{2}}$

d) $\frac{2 \to 3}{5 \to 8}$

$= \frac{6 \div 2}{40 \div 2}$

$= \boxed{\frac{3}{20}}$

<mark>kiss 'n' flip</mark>

e) $\frac{1}{2} \div \frac{3}{4}$

$= \frac{1 \to 4}{2 \to 3}$

$= \frac{4 \div 2}{6 \div 2}$

$= \boxed{\frac{2}{3}}$

f) $\frac{2 \to }{7 \to} \times \frac{4}{1}$

$= \boxed{\frac{8}{7}}$

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