Math 9 Muscardin

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **Chapter 1 – Number Operations**

Test Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

To do:

1.1 – Order of Operations Review

* Complete Notes ⃝

1.2 – Substitution

* Complete Notes ⃝
* Quiz ⃝

1.3 – Introduction to Fractions

* Complete Notes ⃝

1.4 – Adding and Subtracting Fractions

* Complete Notes ⃝

1.5 – Multiplying and Dividing Fractions

* Complete Notes ⃝

1.6 – Computations Involving Decimals

* Complete Notes ⃝
* Quiz ⃝

Chapter Assignment Handout ⃝

**Write Unit Test ⃝**

Math 9 **Lesson 1.1 – Order of Operations Review** Muscardin

A special order of operations is to be done when there are several operations needed to simplify an expression.

**B**

**E**

**D**

**M**

**A**

**S**

**Examples:**

1. $2+4×6-6$ 3. $4×\left(7.1+2\right)-3$
2. $\frac{12×2+8}{(5+8)×14}$ 4. $5-3(5-3.5)(1.5)$

Math 9 **Lesson 1.2 - Substitution** Muscardin

Substitution is the act of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ something with another thing.

In Mathematics we can replace variables or symbols within expressions with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in order to calculate and evaluate an outcome.

**Examples:**

1. $3×a-4×b$ if $a=6, b=2$
2. $24÷\left(2×a\right)+b-3×a$ if $a=3, b=8$
3. $\frac{4×a-2×b}{b-(1+6÷a)}$ if $a=3, b=4$

Math 9 **Lesson 1.3 – Introduction to Fractions** Muscardin

A fraction is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and can be visually illustrated with diagrams. For example:

A fraction is made up of two parts: the top \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the bottom \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Fractions that have the same value are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fractions.

Examples:

$$\frac{4}{6}$$

$\frac{2}{5}$ and $\frac{4}{10}$

We can identify that pairs of fractions are equal to each other by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the fractions to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through identifying a \_\_\_\_\_\_\_\_\_\_\_.

There are 3 types of fractions:

* Proper Fractions \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Improper Fractions \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Mixed Fractions \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

We can convert between improper fractions and mixed fractions.

**Improper to Mixed**

**Mixed to Improper**

Math 9 **Lesson 1.4 – Adding and Subtracting Fractions** Muscardin

In order to add or subtract fractions the denominators must be the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

When fractions are over the same denominator just add and/or subtract the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Examples:

$$\frac{3}{7}+\frac{2}{7}$$

When the denominators are not the same, re-write the fractions into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fractions with the same denominator first, then add or subtract the numerators.

Examples:

$$\frac{4}{5}+\frac{3}{10}$$

$$\frac{5}{6}-\frac{1}{3}$$

$$4\frac{1}{8}-2\frac{3}{16}$$

Math 9 **Lesson 1.5 – Multiplying and Dividing Fractions** Muscardin

In order to find the product of fractions, find the product of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the product of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Final answers are reduced by dividing the top and the common by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Examples:

$$\frac{3}{4}×\frac{14}{15}$$

$$5×\frac{3}{8}$$

When finding the product of mixed fractions, rewrite them as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fractions first and then find the product.

Examples:

$$3\frac{2}{3}×1\frac{1}{2}$$

In order to divide fractions, you must multiply the first fraction by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the second fraction.

The reciprocal of a number is a number that gives the product of \_\_\_\_\_\_.

Examples:

A common phrase to remember how to divide fractions is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Examples:

$$4÷\frac{1}{3}$$

$$\frac{3}{4}÷12$$

$$1\frac{2}{5}÷1\frac{1}{6}$$

Math 9 **Lesson 1.6 – Computations Involving Decimals** Muscardin

Process for adding and subtracting decimals is

* Line up the decimal points vertically
* Find the sum or difference of digits in the same column, beginning at the right
* If necessary, carry (when adding) or borrow (when subtracting) using place values

**Examples:**

1. $2.04+17.18$ 2. $100.04-8.025$

When multiplying decimals proceed as you would with whole numbers and then count off the same number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the answer as there are in the factors multiplied.

**Examples:**

1. $5.15×0.5$ 2. $2.03×5$

When dividing a decimal by a whole number,\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the decimal point in the quotient directly above the decimal point in the dividend.

If the divisor is not a\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, move the decimal point to the right to make it a whole number and move the decimal points in the dividend the same number of places.

Perform the division as you would whole numbers.

**Examples:**

1. $31.5÷7$
2. $250.02÷2.7$