|  |  |
| --- | --- |
| ***Multiplication and Division of Fractions with Positives***  **Handout-KEY** | **Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |

**Objective: To practice multiplying and dividing fractions.**

**Segment 1**: Definition of a fraction.

Everyday objects are often divided into sections. A cake is good example because it has to be cut into pieces to be served to guests.

The simple definition of a fraction is that it represents part of a whole unit. There are two important terms to know when studying fractions: numerator and denominator. In fractions the top number is counting, i.e. numerating; so it is called the numerator; and the bottom number is identifying the type of piece that is being counted, i.e. denominating, so it is called the denominator.

Special property of 1

The number 1 can be written as a fraction where the numerator and denominator are the same.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | |  | |  | |  | |  | |  | |  | |  | | |  | | --- | |  | | |  | |  | |  | |  | |  | |  | |  | | --- | |  | | |  | |  | |  | |  | |  | |  | |  | |  | | |  | | --- | |  | | | |  | |  | |  |  |  |
| Whole | | | | |  | | 1 | |  | |  | |  |  |  | |  | |  | |  | |  | |  |  |  | |  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  | |  | |
|  |  | |  | |  | |  | |  | |  | |  |  |  | |  | |  | |  | |  | |  |  |  | |  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  | |  | |
|  |  | |  | |  | |  | |  | |  | |  |  |  | |  | |  | |  | |  | |  |  |  | |  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  | |  | |
|  |  | |  | |  | |  | |  | |  | |  |  |  | |  | |  | |  | |  | |  |  |  | |  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  | |  | |

To find the reciprocal of a fraction, simply interchange the numerator and the denominator.

Note: The product of the fraction and its reciprocal is 1.

Practice: Find the reciprocal of

1. (b) 32 (c) (d) 0

Ans: 4/9 1/32 3 undefined

**Segment 2**: Multiply and divide fractions.

* The **product of two** **fractions** is the product of the numerators divided by the product of the denominators.
* To **divide two fractions**, invert the divisor and multiply.

Note: Don’t forget to simplify your answer to lowest terms.

Practice: Multiply or divide.

1. (b) (c)

Ans: Ans: Ans:

(d) (e) (f)

Ans: 20 Ans: 6 Ans: 1/10

**Segment 3**: Multiply and divide mixed numerals.

Procedure to convert a mixed number into an improper fraction.

-Multiply the whole number by the denominator.

-Add the numerator to the product to get the numerator of the improper fraction.

-Write the improper fraction using this numerator. The denominator remains unchanged.

Practice: Convert each mixed number into an improper fraction:

1. (b) (c)

Ans:

Procedure to change an improper fraction to a mixed number.

-Divide the numerator by the denominator

-Write the answer in the form: .

Practice: Change the proper fraction to a mixed number:

1. (b) (c)

21

**To multiply mixed numbers:**

-First change the mixed numbers to fractions

-Multiply the numerators to get the numerator of the answer. Multiply the denominators to get the denominator of the answer.

-Convert the answer back to mixed numeral

**To divide mixed numbers:**

-First change the mixed numbers to fractions

-Invert the divisor and multiply

-Convert the answer back to mixed number

Practice: Multiply and divide mixed numbers:

1. (b)

Ans: Ans:

(c) (d)

Ans: Ans: 29

**SELF-REFLECTION ACTIVITY**

- Which segment of the multiplication and division of fractions was most challenging for you?

- What steps are you going to take to learn this subject?