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

If the numerator is greater than the denominator, this is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Ex:). These types of fractions can also be written as a whole number and a fraction. This is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Ex:).

**1) REDUCING FRACTIONS TO LOWEST TERMS**

|  |
| --- |
| **RULE:** When using fractions, your solutions must always be given in lowest terms.  **Step 1: Reduce the amount of signs to ONE.**  **Step 2: List the factors (numbers that divide evenly into) of the numerator and denominator.**  **Step 3: Find the Greatest Common Factor (GCF) of (the greatest number that divides evenly into) the numerator and denominator.**  **Step 4: Divide both the numerator and denominator by GCF.**  **Step 5: Ensure that you have ONLY one sign that is place next to the numerator or the fraction.** |

|  |  |
| --- | --- |
| Ex 1:  =  The factors of 9 are: { }  The factors of 12 are: { }  The GCF is \_\_\_\_\_\_\_\_\_. Simply divide the numerator and denominator by this number. These two fractions are also known as **equivalent fractions**. | Ex 2:  =  The factors of 27 are { }  The factors of 45 are { }  The GCF is \_\_\_\_\_\_\_\_\_. |

**Try these:**

a) b)  c) 

**2) CONVERTING IMPROPER FRACTION TO MIXED NUMBER**

|  |
| --- |
| **Ex 3:** Convert  into a mixed number. *Simply, how many groups of 4 go into 13?*  We need to figure out two numbers. Firstly, the whole number and secondly, the numerator. We already know the denominator which is 4.  **IMPORTANT: Reduce the amount of signs to one before any conversion.**  **Step 1**: Divide 13 by 4. The answer is 3.25. Thus, there are 3 groups of 4 that go into 15. Three is the whole number of our mixed number. **Step 2:** 3 groups of 4 make 12 (3 times 4). |||| |||| |||| ||||  **Step 3:** Subtract 12 from 13. The answer is 1. When 13 is divided into groups of 4. There will be 1 remaining. One is the numerator of the mixed number. |

**Try these:** a)  b)  c) 

**3) CONVERTING MIXED NUMBERS INTO IMPROPER FRACTIONS**

|  |
| --- |
| This is the opposite of what we did in the previous section.  is telling me that there are 3 groups of 7 bundled together and 2 remaining. Therefore, the total must be 3 x 7 + 2 which is 23. Thus, the answer is 23/7. |

**IMPORTANT: DISREGARD THE SIGN UNTIL THE CONVERSION IS DONE**

To convert mixed numbers to improper fractions:  or 

|  |  |
| --- | --- |
| Example 4: | Example 5: |

**Try these:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| a. |  | b. |  | c. |

**4) MULTIPLYING FRACTIONS**

|  |
| --- |
| **Step 1: Convert any mixed number into improper fraction.**  **Step 2: Multiply the numerators with each other. This is your numerator.**  **Step 3: Multiply the denominators with each other. This is your denominator.**  **Step 4: Reduce the final answer.** |

|  |  |
| --- | --- |
| Ex 6: | Ex 7: |

**5) DIVIDING FRACTIONS**

|  |
| --- |
| **Step 1: Convert any mixed number into improper fraction.**  **Step 2: Reciprocate the second fraction. Simply, switch the numerator with the denominator.**  **Step 3: Division becomes multiplication. Follow the rules for multiplication.** |

|  |  |
| --- | --- |
| Ex 8: | Ex 9: |

**Try these:**

a)  b)  c) 