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

**Fractions**

**Rule for Adding and Subtracting Fractions:**

**(1) Find the least common denominator (LCD) of the fractions.**

**(2) Convert each fraction to an equivalent fraction with LCD as the denominator.**

**(3) Add or subtract the numerators, keep the LCD as the denominator.**

**(4) Reduce the answer to the lowest term.**

1. **Practice Problems**:

a.  b. 

c. 

**Rule for Multiplying Simple or Improper Fractions:**

**(1) Reduce numerators with denominators, where possible (Cross cancel).**

**(2) Multiply all the numerators together; and multiply all the denominators together. (Multiply across)**

**(3) Reduce the answer to the lowest term. (If step (3) is performed properly, the answer should already be in the lowest term)**

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**Rule forDividing Simple or Improper Fractions:**

**(1) Change division to multiplication by taking the reciprocal of the fraction after the division sign .**

**(2) Follow the steps for multiplying fractions.**

2. **Practice Problems**:

a.  b. 

c.  d. 

e. 

**I. Properties of Exponents**

|  |  |
| --- | --- |
| Multiplication/Product Rule |  |
| Division/Quotient Rule | where |
| Zero Exponent | where |
| Power of a Power |  |
| Power of a Product |  |
| Power of a Quotient | where |
| Negative Exponent | where |

**2. Find the error in each problem. Use the properties of exponents to justify your answers.**

**Find the error #1**  **Find the error #2**

Multiply:  Add: 

**Find the error #3 Find the error #4**

 



**Find the error #5**



3. Simplify and leave your answers with positive exponents only.

a.  b. 

c.  d. 

e. 

4. Write the following numbers in scientific notation.

1. The average distance from the [center of the Earth](http://www.universetoday.com/48688/center-of-the-earth/) to the center of [the Moon](http://www.universetoday.com/19424/the-moon/) is 384,403 km.

b. The estimated cost of aid and reconstruction following the 2004 tsunami was $7,500,000,000

c. The mass of a proton is 0.0000000000000000000000000016726 kg

d. The average cost for a pound of coffee in 1887 was $0.106.

5. Perform the indicated operation and write your answer in scientific notation.

a.  b. 

c. 