**Reducing a Fraction to Lowest Terms (review)**

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| Example: |  |  |
| Steps: Find a common factor between the numerator and denominator. Divide both by that common factor. Note: If both are even, you can always reduce the fraction further. |  |  |

**Adding (review) – Two Fractions**

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| Example: |  |  |
| Steps: Find a common denominator. Whatever you do to the bottom of the fraction to turn it into that common denominator, also do it to the top. Add the tops and keep the bottoms the same. |  |  |

**Subtracting (review) – Two Fractions**

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| Example: |  |  |
| Steps: Find a common denominator. Whatever you do to the bottom of the fraction to turn it into that common denominator, also do it to the top. Subtract the tops and keep the bottoms the same. |  |  |

**Converting Mixed Numbers to Improper Fractions (review)**

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| Example: |  |  |
| Steps: Multiply the denominator by the number of wholes, then add the numerator to get the total pieces. The denominator stays the same! |  |  |

**Converting Improper Fractions to a Mixed Number (review)**

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| Example: |  |  |
| Steps: See how many times your numerator can make, or “fill up” your denominator. This is your whole number. Whatever is left over is the new numerator. Reduce. The denominator stays the same! |  |  |

**Simplifying When Multiplying Fractions**

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| Example: |  |  |
| Steps: Look diagonally. If the diagonal numbers have a common factor, you can divide both number by that factor to get smaller, easier to work with numbers. |  |  |

**Multiplying – a Whole Number and a Fraction**

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| Example: |  |  |
| Steps: Imagine the whole number is over a “1”. Multiply the tops across and the bottoms across. Reduce. |  |  |
| Model: Whole X fraction = This many OF that fraction.Fractions X whole = this fraction OF the whole. |  |  |

**Multiplying – Two Fractions**

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| Example: |  |  |
| Steps: Multiply across the tops and the bottoms. If the numbers are big, see if you can simplify diagonally. Reduce. |  |  |
| Model: Cut the box and shade to show the second fraction. Cut the shaded part and shade again to show the first fraction. Answer = number of double shaded over total # of pieces in all. |  |  |

**Dividing – a Whole Number and a Fraction**

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| Example: |  |  |
| Steps: Imagine the whole number is over a “1”. Keep, Change, Flip. Multiply the tops across and the bottoms across. Reduce. |  |  |
| Model: (A whole divided by a fraction only)Break the whole into groups of the fraction. Count the groups. |  |  |

**Dividing – Two Fractions**

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| Example: |  |  |
| Steps: Keep, Change, Flip. Multiply across the tops and the bottoms. If the numbers are big, see if you can simplify diagonally (only works at the multiplying step). Reduce. |  |  |
| Model: Put both over a common denominator. Draw a number line with the first numerator as the number of pieces. Skip in groups the size of the second numerator. Count the skips. |  |  |

**Multiplying Mixed Numbers**

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| Example: |  |  |
| Steps: Convert all mixed numbers to improper fractions. Multiply across (simplify first if needed). Reduce. |  |  |

**Dividing Mixed Numbers**

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| Example: |  |  |
| Steps: Convert all mixed numbers to improper fractions. K.C.F. Multiply across (simplify first if needed). Reduce. |  |  |

**Solving Fraction Word Problems**

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| Example: Frank mixed two-thirds of a cup of flour and three-quarters of a cup of sugar. How much ingredients did he have altogether? | Suzie had 45 signed baseballs in her collection. Four-ninths of them were autographed. How many signed baseballs does she have? |  |
| Steps: Read the whole question. Go back and find your numbers. Use common sense and key words to determine the function (X / + —). Solve. Reduce. Answer with a sentence.Find the Numbers: * We have “2/3” and “3/4”.

Key Words: * “AND” and “ALTOGETHER” suggest adding.

Think about the problem:Do any other functions make sense?* It says “OF”, but only referring to how much of one cup each ingredient was. He is not saying 2/3 of 3/4, so multiplying is out.
* We are not taking anything away or finding a difference so we are not subtracting.
* We are not breaking into pieces or groups, so dividing also wouldn’t work.

Does adding make sense?* It would make sense to add because he is putting two things together and finding the new total.

Decision: * It must be adding!

Solve, Reduce, Answer:***Frank has one and five twelfths cups of ingredients in all.*** |  |  |