Real Life Fraction Problems
Sample Solutions (other methods possible)
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1. I needed to add $\frac{1}{2} - \frac{1}{3} = \frac{1}{6}$ of a cup to the bowl. One way to do this is to take half of the $\frac{1}{3}$ cup measure. Associated problems: $\frac{1}{3} \div 2 = \frac{1}{6}$ and $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$.

2. Following the above, I could try to remove $\frac{1}{6}$ cup flour from the bowl. If this wouldn't work, I could notice that I have $1\frac{1}{2}$ times as much flour as I want (associated problem $\frac{1}{2} \div \frac{1}{3} = 1\frac{1}{2}$ or $\frac{3}{6} \div \frac{2}{6} = 3 \div 2 = 1\frac{1}{2}$) and then try to make $1\frac{1}{2}$ recipes instead. I could also add $\frac{1}{6}$ cup of flour to the bowl, so I'd have $\frac{1}{2} + \frac{1}{6} = \frac{2}{3}$ cup in the bowl, and then I could make a double recipe.

3. Each load uses $50 \div 16 = \frac{50}{16} = 3\frac{1}{8}$ ounces.

4. Here the question is, "How many $\frac{3}{4}$'s are there in 50?" The answer is $50 \div \frac{3}{4} = 66\frac{2}{3}$; note that the answer is bigger than 50, which makes sense: I can do more than 50 loads if each load requires less than 1 ounce.

5. The original hair was $\frac{3}{8} + 2\frac{1}{4} = 2\frac{5}{8} = \frac{21}{8}$ inches long. The remaining hair is $\frac{3}{8}$ inches long. Since $7 \times \frac{3}{8} = \frac{21}{8}$, my hair was seven times as long before I cut compared to afterward, and $\frac{1}{7} = \frac{3}{8} \div \frac{21}{8}$ of that original hair remained on my head (and I cut off $1 - \frac{1}{7} = \frac{6}{7}$ of the hair).

6. I am trying to make $\frac{1}{6}$th of a recipe. I need $\frac{1}{6} \times \frac{1}{4} = \frac{1}{24}$ cup of witch hazel. There are 48 teaspoons in a cup, so I will need $\frac{1}{24} \times 48 = 2$ teaspoons of witch hazel and the same

for vinegar. I need $\frac{1}{6} \times 2 = \frac{1}{3}$ teaspoon of soap; I can approximate this by filling up the

half teaspoon measuring spoon about $\frac{2}{3}$ of the way (since $\frac{2}{3} \times \frac{1}{2} = \frac{1}{3}$) or using another

method. I need twice as many drops of essential oil as I did teaspoons of soap, so I need

$\frac{2}{3}$ of a teaspoon, and can approximate with the spoons.

7. I need to make $\frac{3}{4}$ of a recipe, which will use $\frac{3}{4}$ cup oil, $\frac{1}{4}$ cup sugar, etc.

8. This case is making $2\frac{1}{2}$ recipes…

9. The fraction going to the rally is $\frac{2}{3} \times \frac{5}{6} = \frac{5}{9}$, which wouldn't change if the class were

bigger.

10. Visually, I would waste two long thin strips, each measuring $\frac{1}{9}$ yard (or $\frac{1}{9} \times 36 = 4$

inches) by $4\frac{8}{9}$ yards (or 4 yards, 32 inches), with the strips overlapping in a 4 x 4 inch

square. Total waste is $25 - 4\frac{8}{9} \times 4\frac{8}{9} = 1\frac{8}{81}$ square yards.