Assignment Record Sheet

Math Core A

Full Name: _____ **Week: 2/3 - 2/7**

Unit Name: Let's Be Rational Period: 4

Date Assigned	Focus Question??	Homework (IP=in packet)	Meets Expectation (15 points)	Approaching Expectations (5 points)	Below Expectation (0 points)
Monday Feb. 3	*What are some strategies for adding and subtracting mixed numbers?*	**WU:** Strategies for Solving Fractions (IP) **CW:** Labsheet: Adding & Subtracting Fractions (IP) **HW:** ACE #31 & 32 (IP)	**WU:** **CW:** **HW:**		
Tuesday Feb. 4	*What are some strategies for adding and subtracting mixed numbers?*	**WU:** Labsheet 1.4: Recipe Cards (IP) **CW:** Prob. 1.4 B-E p. 17 **HW:** ACE #37 & 38 (IP)	**WU:** **CW:** **HW:**		
Wed. Feb. 5	*What are some strategies for adding and subtracting mixed numbers?*	**WU:** None **CW:** Math Review **HW:** None	**WU:** **CW:** **HW:**		
Thursday Feb. 6	*What are some strategies for adding and subtracting mixed numbers?*	**WU:** None **CW:** Check Up 1 Review **HW:** Study for Quiz	**WU:** **CW:** **HW:**		
Friday Feb. 7	*What are some strategies for adding and subtracting mixed numbers?*	**WU:** None **CW:** Check Up 1 Quiz **HW:** None ***Turn in your math packet***	**WU:** **CW:** **HW:**		

How are part

Total Homework Score for the Week: _____/75

Daily Materials Score _____/25

Problem 1.4 Student Strategies

Strategy for Addition:

When finding the total spice used in the Garam Masala recipe, you can combine all the whole numbers, then the halves and fourths, followed by the thirds.

$$6 + 2 + 2 \qquad \frac{1}{2} + \frac{1}{2} + \frac{3}{4} \qquad \frac{2}{3} + \frac{1}{3} + \frac{2}{3}$$

$$10 + 1\frac{3}{4} + 1\frac{2}{3}$$

Then find common denominators for the problem $10 + 1\frac{3}{4} + 1\frac{2}{3}$.

Strategy 1 for Subtraction:

We used what we know about whole-number regrouping but applied it to fractions. We used a regrouping algorithm:

$$4\frac{3}{8} - 2\frac{7}{8} = 3\frac{11}{8} - 2\frac{7}{8}$$

$$= 1\frac{4}{8}$$

$$= 1\frac{1}{2}$$

Strategy 2 for Subtraction:

You can rename the mixed numbers as improper fractions and then subtract. Afterwards, convert the difference back into a mixed number. This way, you don't need to regroup:

$$4\frac{3}{8} - 2\frac{7}{8} = \frac{35}{8} - \frac{23}{8}$$
$$= \frac{12}{8}$$
$$= 1\frac{4}{8}$$
$$= 1\frac{1}{2}$$

Strategy 3 for Subtraction:

I used a negative-number strategy that I use whenever I do whole-number subtraction. For example, for $4\frac{3}{8} - 2\frac{7}{8}$, start with either the whole numbers or the fractions and subtract to get $4 - 2 = 2$ and $\frac{3}{8} - \frac{7}{8} = -\frac{4}{8}$. Next, combine $-\frac{4}{8}$ and 2 to get $2 - \frac{4}{8} = 1\frac{4}{8}$, or $1\frac{1}{2}$.

w/u 2/3/20 Pr. 4

Student Algorithm 1:

If you have quantities with different denominators, you can rename the fractions as equivalent fractions. Then add the parts, and then add the whole numbers.

For example, in Question A, all of the fractions can be rewritten as tenths. In Question B, the fractions can be rewritten as eighths. In Question C, the fractions can be rewritten as twelfths.

Student Algorithm 2:

You can first combine parts that easily make wholes. Then find ways to combine the remaining fractional parts.

In Question C, this is easy since $\frac{2}{3}$ and $\frac{1}{3}$ equals 1 whole and $2\frac{1}{2}$ and $6\frac{1}{2}$ is 9 wholes. You just have to make equivalent fractions using twelfths to add the remaining $\frac{2}{3}$ and $2\frac{3}{4}$.

Student Algorithm 3:

You can rewrite mixed numbers as improper fractions when you subtract so that you do not have to regroup.

Student Algorithm 4:

You can subtract the whole-number portions, then the fractional portions. If you end up with a negative fractional portion, just subtract that from your whole-number difference.

Student Algorithm 5:

You can regroup one whole from the first mixed number in the subtraction sentence. That way, you will be able to subtract easily.

c/w

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Labsheet Algorithms for Adding and Subtracting Fractions

An algorithm is a plan, or a series of steps, for doing a computation. For an algorithm to be useful, each step should be clear and precise.

After completing these exercises, you should understand, and feel comfortable using, an algorithm for adding fractions and an algorithm for subtracting fractions.

A. For each of the following sums or differences:

- Estimate the sum or difference.
- Use an algorithm to find the exact sum or difference.
- Compare your estimate to the exact answer.

1. $\frac{2}{9} + \frac{4}{9}$ **2.** $\frac{5}{6} - \frac{1}{6}$ **3.** $\frac{1}{2} + \frac{5}{12}$

4. $1\frac{2}{3} - \frac{1}{3}$ **5.** $1\frac{1}{3} - \frac{2}{3}$ **6.** $\frac{2}{9} + 3\frac{1}{4}$

7. $8\frac{1}{4} - 2\frac{2}{3}$ **8.** $2\frac{7}{16} + \frac{4}{8}$ **9.** $1\frac{2}{3} + 2\frac{5}{6}$

B. 1. Sort the problems from Question A into two groups:

- Group 1: problems that require less work than the others to solve
- Group 2: problems that require more work than the others to solve

2. Explain why you put each problem into the group you chose.

C. Write one new fraction addition problem and one new fraction subtraction problem for each of your groups. Explain why the problems belong in that group.

D. Write an algorithm for finding sums and differences for the problems in each group. Be sure to include instructions for any special or tricky cases.

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Labsheet 1.4 Recipe Cards

Spice Parisienne

$\frac{2}{5}$ oz ground cloves

$1\frac{1}{5}$ oz ground ginger

$1\frac{1}{5}$ oz ground nutmeg

$1\frac{1}{10}$ oz cinnamon

Garam Masala

$\frac{2}{3}$ oz cinnamon

$\frac{1}{3}$ oz ground cloves

$6\frac{1}{2}$ oz cardamom

$\frac{2}{3}$ oz coriander

$2\frac{1}{2}$ oz cumin

$2\frac{3}{4}$ oz black pepper

Grind all spices together with a mortar and pestle or in a coffee mill.

Betty's Cake Spices

$1\frac{1}{8}$ oz cardamom

$\frac{5}{8}$ oz ground cloves

$2\frac{1}{2}$ oz allspice

$4\frac{1}{4}$ oz cinnamon

$2\frac{5}{8}$ oz ground nutmeg

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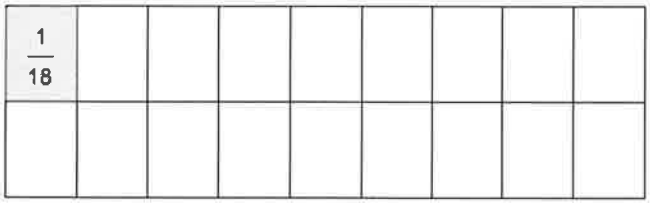
Labsheet 1ACE

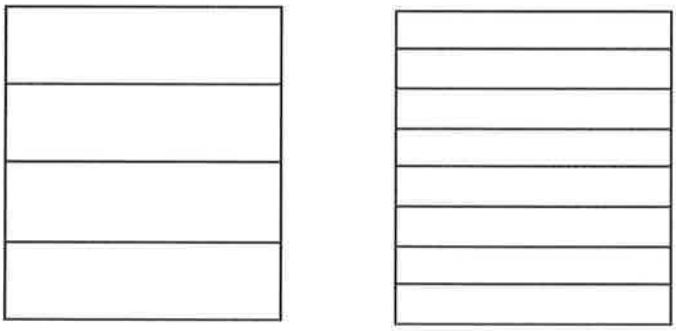
Exercises 31, 32, 37, 38

31. Rico and his friend eat some lasagne (see below). Rico eats $\frac{1}{9}$ of the lasagna, and his friend eats $\frac{1}{18}$ of the lasagne. **How much of the lasagna is left?**



HINT: $\frac{1}{18}$ 18 has been filled in. Fill in $\frac{1}{9}$.

32. Sonia eats a $\frac{3}{4}$ full small bag of chips. Then, Sonia eats $\frac{1}{8}$ of another small bag of chips. **What fraction of a small bag of chips does Sonia eat altogether?**



HINT: Show (shade) $\frac{3}{4}$ and $\frac{1}{8}$ on the bags of chips at the left.

For Exercises 37 and 38, determine which sum or difference is greater. Show your work.

37. $\frac{2}{3}+\frac{5}{6}$ or $\frac{3}{4}+\frac{4}{5}$

Find common denominators.

$\frac{2}{3}=\frac{4}{6}$ $\frac{3}{4}=\frac{15}{20}$ and $\frac{4}{5}=\frac{16}{20}$

Add.

$\frac{4}{6}+\frac{5}{6}=\frac{9}{6}$ $\frac{15}{20}+\frac{16}{20}=\frac{31}{20}$

h/w

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Labsheet 1ACE

Exercises 31, 32, 37, 38 (continued)

Because you want to compare $\frac{9}{6}$ and $\frac{31}{20}$, you will want to find a **common multiple** of the two denominators. Both 6 and 20 are factors of 60 ($6 \times 10 = 60$ and $20 \times 3 = 60$). 60 is the **least common multiple** of 6 and 20.

You will want to rewrite the sums you are comparing $\left(\frac{9}{6} \text{ and } \frac{31}{20}\right)$ using the common denominator of 60.

$$\frac{9}{6} = \frac{90}{60} \quad (6 \times 10 = 60 \text{ and } 9 \times 10 = 90)$$

$$\frac{31}{20} = \frac{93}{60} \quad (20 \times 3 = 60 \text{ and } 31 \times 3 = 93)$$

When you write the sums in terms of their common denominator, you have $\frac{90}{60}$ and $\frac{93}{60}$.

Compare $\frac{90}{60}$ and $\frac{93}{60}$. $\frac{93}{60}$ is larger.

So, the sum of $\frac{3}{4} + \frac{4}{5}$ is larger.

38. $\frac{7}{6} - \frac{2}{3}$ or $\frac{3}{5} - \frac{5}{10}$

CW

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Check Up 1 Review for use after Investigation 1

1. Decide if each sum is closest to 0, $\frac{1}{2}$, or 1. Explain your reasoning.

a. $\frac{1}{4} + \frac{2}{3}$ **b.** $0.5 + \frac{1}{6}$ **c.** $\frac{1}{8} + \frac{3}{4}$

2. Multiple Choice Which sum is closest to 1? Explain your reasoning.

A. $0.5 + \frac{3}{4}$ **B.** $\frac{5}{6} + \frac{1}{4}$ **C.** $\frac{3}{4} + \frac{2}{3}$

3. At D. J.'s Drink Stand, Erika ordered a cup of fruit punch made using the following recipe.

$\frac{1}{4}$ cup lemonade

$\frac{1}{12}$ cup cranberry juice

☐ cup orange juice

What fraction of Erika's cup will be orange juice? Write a number sentence to support your answer.

clw

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Check Up 1 Review (continued)

4. Mr. Gomez ordered three pizzas for some members of his cross-country team. The four of them ate the following amounts.

Scott ate $\frac{2}{3}$ of a pizza.

Nate ate $\frac{7}{12}$ of a pizza.

Da-Wei ate $\frac{5}{12}$ of a pizza.

Mr. Gomez ate $\frac{5}{6}$ of a pizza.

a. How many pizzas did they eat? Write a number sentence to support your answer.

b. How many pizzas were left? Write a number sentence to support your answer.

5. Find each sum or difference. Show all your work.

a. $\frac{2}{3}+\frac{4}{5}$

b. $3\frac{2}{3}+7\frac{3}{8}$

c. $\frac{3}{4}-\frac{2}{5}$

d. $10\frac{2}{3}-8\frac{9}{12}$