

# Pre-Algebra Activity 2: Adding and Subtracting Unlike Fractions

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CALCULATORS: Casio: *fx-300ES* • Casio: *fx-115ES*

## Teaching Notes/Lesson Plan Level: Pre-Algebra Middle School

### Objective

To familiarize students with the fraction capabilities of the Casio calculator. The students will be able to add and subtract fractions with unlike denominators and write answers in mixed number form and improper fraction form and their decimal equivalents.

### Engage

Discuss with students where we see fractions in everyday life. Discuss with the students the different professions where fractions would be used. Have the students make a list of these professions and when fractions would be used.

### Explore

1. Students will set calculator for input of fractions in mixed number form.
2. Students will enter pertinent information for examples into calculator.
3. Students should write answers in mixed number form.
4. Students should find the improper fraction equivalent of each mixed number.
5. Students should find the decimal equivalent of each mixed number.

### Explain

Students should explain to the necessity of fractions in our everyday life. The discussion should include an explanation of why a fraction is more precise than a decimal in some instances, and that in some professions, fractions are easier to work with.

### Elaborate

Students can share ideas and explanations with their small groups and present them to the class as a group of why fractions are important in everyday life.

### Evaluate

Give students additional examples to calculate. Have students create, as a small group, word problems for the rest of their class to complete involving adding and subtracting unlike fractions.

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### Student Worksheet Activity 2

#### Objectives

The student will be able to:

1. Enter information into the calculator using the mixed number format key,
2. Find the answer in mixed number form,
3. Convert the answer to improper form, and
4. Convert the answer to decimal form.

#### Example

News that sales of a certain magazine were brisk after its August 2002 debut sent stocks of publishing companies up. On Monday, August 5, 2002, one company's stock rose  $\$1\frac{3}{8}$  to close at  $\$45\frac{1}{4}$ . What was the opening price for the company that day?

#### Procedure

1. Turn on calculator.
2. Set mode:
  - a. Press **MODE** key.
  - b. Press **1** for computation.
3. Set calculator to mixed number mode:
  - a. Press **SHIFT SETUP**.
  - b. Press the **down arrow**.
  - c. Select **1** for *ab/c* which is the mixed number symbol.
4. Enter  $\$45\frac{1}{4}$  by pressing **SHIFT** and the **Fraction** key. You will notice that a symbol for mixed numbers in natural display is above this key in yellow.
5. Key in **45**.
6. Press the **right arrow**.
7. Key in **1**.
8. Press the **down arrow**.
9. Key in **4**.
10. Press **Replay** button to the right.
11. Press subtraction (-) key
12. Press **Shift** and the **Fraction** key.
13. Key in **1**.
14. Press the **Replay** button to the right.
15. Key in **3**.
16. Press the **down arrow**.

**Student Worksheet Activity 2**

17. Key in 8.
18. Press the **right arrow**.
19. Press equals (=) key.
20. Answer is given in mixed number form.

**To change the mixed number to improper fraction:**

1. Keep answer on screen.
2. Press **SHIFT** and then press **d/c**.
3. Answer now shown in improper form.
4. Follow steps 1 through 2 to change it back to mixed number form.

**To change the mixed number to a decimal:**

1. Keep answer in display screen.
2. Press the **S↔D** key.
3. Answer is now in decimal form.
4. Press the **S↔D** key again to switch back to fraction form.

**Student Worksheet Activity 2****Problems**

Solve each equation. Write the solution in simplest form as a mixed number (when possible), improper fraction and decimal rounded to the thousandths place.

1.  $\frac{1}{3} + \frac{5}{6} = h$

2.  $y = 14\frac{3}{7} + 6\frac{4}{21}$

Evaluate each expression if  $x = \frac{5}{8}$ ,  $y = \left(-\frac{3}{4}\right)$  and  $z = 2\frac{7}{12}$ .

Write in simplest form as a mixed number (when possible), improper fraction, and decimal rounded to the hundredths place.

3.  $x + z$

4.  $z - x - y$

5.  $z + x - y$

Use the chart below to answer the following questions.

How Do You Choose an Airline?	
Reason	Fraction
Size/Type of Aircraft	3/100
Safety Record	8/25
Frequent Flyer Mileage	1/25
Cost	23/50
No Response	1/100
Time of Departure/Arrival	7/50

6. What fraction of those asked said they look at cost or safety record? \_\_\_\_\_

7. What is the difference between the fraction of people who said they considered time of arrival or departure and the number who chose based on the size or type of aircraft?  
\_\_\_\_\_

Write the solution in simplest form as a mixed number (when possible), improper fraction and decimal rounded to the thousandths place.

8. A carpet layer needs  $12\frac{1}{2}$  square yards of carpet for one room and  $18\frac{3}{4}$  square yards for another room.

How much carpet is needed in all? \_\_\_\_\_