

# Study Guide: Adding and Subtracting Mixed Numbers

## Guided Notes:

Remember, adding and subtracting mixed numbers is actually quite easy after you find the **least common multiple / common denominator!** First, you add or subtract the whole numbers, then you add or subtract the fractions. Try it with this guided example:

$$3\frac{1}{5} + 6\frac{2}{5} =$$

Add the whole numbers  $\rightarrow$     $\leftarrow$  Add the fractions.

It's that simple! However, remember there are some **special circumstances** you must be aware of.

### Special Case One: Your answer has an improper fraction.

Let's say your answer has an improper fraction like  $2\frac{5}{4}$ . This is an easy scenario to deal with. First we turn the improper fraction into a mixed number, then we add it back in to the whole number. Follow the example below.

Turn  $\frac{5}{4}$  in a mixed number:

Now add the mixed number and the whole number:  $2 +$    $=$

### Special Case Two: Your mixed number's fractions can't be subtracted.

Sometimes, you may not be able to subtract the fraction components because the first fraction is too small. In this case, do **the Two-Step!** Remember: Take one away from the whole number, then add the denominator of the fraction to the numerator.

$$5\frac{1}{5} - 2\frac{3}{5}$$

Take one away from the whole number,    $- 2\frac{3}{5} =$

Add the denominator to the numerator.   $\frac{\text{input}}{5} - 2\frac{3}{5} =$

**Special Case Three: The first number in subtraction lacks a fraction.**

If the **first number** (not the second, that does not matter) lacks a fraction to subtract, you must **create** a fraction by taking 1 from the whole number, and creating a **whole fraction** (a fraction that equals one; the denominator is the same as the numerator). The fraction you made should have the same denominator as the other fraction.

After doing that, you can subtract normally. Try it with the following example.

Take one away from the whole. The denominators should match. What should the numerator be?	$6 - 1\frac{1}{3} =$
	$\boxed{\phantom{00}}\frac{\boxed{\phantom{00}}}{3} - 1\frac{1}{3} = \boxed{\phantom{00}}$

Move on to the next page for this study guide's questions.

## Operation Problems

1.  $2\frac{1}{3} + 3\frac{1}{3}$

6.  $15\frac{1}{2} - 13\frac{1}{4}$

2.  $5\frac{1}{4} + 3\frac{1}{2}$

7.  $7\frac{1}{4} - 3\frac{3}{4}$

3.  $8\frac{3}{4} + 2\frac{3}{4}$

8.  $16\frac{1}{6} - 12\frac{4}{5}$

4.  $5\frac{3}{5} + 3\frac{5}{6}$

9.  $125\frac{7}{10} + 300\frac{4}{5}$

5.  $7\frac{6}{8} - 4\frac{2}{8}$

10.  $200\frac{5}{12} - 198\frac{4}{10}$

### Word Problems

1. Dakota makes a salad dressing by combining  $6\frac{1}{3}$  oz. of oil with  $2\frac{3}{8}$  oz. of vinegar in a jar.

a. How many oz. of salad dressing did she make?

b. She pours out  $2\frac{1}{4}$  oz. of dressing onto her salad. How much is left **in the jar**?

2. Look at the following sequence. What is the missing value? (Hint: Do the denominators match?)

$$\frac{3}{10}, \frac{2}{5}, ???, \frac{3}{5}, \frac{7}{10}$$

3. Gavin is making tangerine paint. He mixes  $3\frac{9}{10}$  oz. of red paint and  $2\frac{3}{8}$  oz. of yellow paint. How many oz. of tangerine paint does this make?

4. During his first vet visit, Pedro's puppy weighed  $6\frac{1}{8}$  pounds. On the second visit, it weighed  $9\frac{1}{16}$  pounds. How much weight did it gain between visits?

5. Ms. Roth walked  $8\frac{1}{8}$  miles to the park, then only  $7\frac{2}{5}$  miles to get home.

- a. How many miles did she walk in total?
- b. How many more miles did Ms. Roth walk to get to the park than she did to get home?
6. This week, Talulla worked  $2\frac{1}{2}$  hours on Monday,  $2\frac{2}{3}$  hours on Tuesday, and  $3\frac{1}{4}$  hours on Wednesday. How many more hours will Talulla need to work to reach her goal of  $10\frac{1}{2}$  hours worked?