

Math 7 Notes
(Section 4-5)
Adding & Subtracting Mixed Numbers

** Your book shows you to write mixed numbers as improper fractions, get a common denominator, and add or subtract. This is **only efficient when the integer part of the number is small.** Therefore, in most cases, we will be adding and subtracting mixed numbers by keeping them in mixed number form.

Example (book way):

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

~~$\frac{18}{5} - \frac{5}{3}$~~

~~$\frac{54}{15} - \frac{25}{15}$~~

~~$\frac{29}{15}$~~

~~$1\frac{14}{15}$~~

Please **Do Not Use** this Method for **BIG NUMBERS!!**

Example: ~~$48\frac{3}{7} - 32\frac{6}{7}$~~

~~$\frac{339}{7} - \frac{230}{7}$~~

~~$\frac{339-230}{7}$~~

~~$15\frac{3}{7}$~~

DO NOT DO THIS METHOD FOR NUMBERS LIKE THIS!

Examples with Positive Numbers

$26\frac{4}{9} + 34\frac{5}{6}$

9
18

$26\frac{8}{18} + 34\frac{15}{18}$

Add
Ans pos

$26\frac{8}{18}$

$+ 34\frac{15}{18}$

 $60\frac{23}{18} = 60 + 1\frac{5}{18} = 61\frac{5}{18}$

Examples with Positive Numbers

$87\frac{3}{4} - 56\frac{2}{3}$

$87\frac{9}{12} - 56\frac{8}{12}$

subt.
Ans pos

$87\frac{9}{12}$

$- 56\frac{8}{12}$

 $31\frac{1}{12}$

Examples with Positive Numbers

$54\frac{4}{9} - 36\frac{5}{6}$

subt.
ans pos

$54\frac{8}{18} - 36\frac{15}{18}$

$54\frac{8}{18} = 53\frac{26}{18}$

$\ominus 36\frac{15}{18} = 36\frac{15}{18}$

 $17\frac{11}{18}$

To add or subtract rational numbers:

- 1) Rewrite fractions with common denominators.
- 2) Rewrite every subtraction problem as its related addition problem.

3) For each addition problem ask yourself:

*Am I going to ADD absolute values (same signs)

OR

SUBTRACT absolute values (different signs)

*Will my answer be NEGATIVE or POSITIVE?

$$35\frac{3}{4} - 52\frac{1}{3}$$

ADD or SUBTRACT?
Answer NEG or POS?

$$35\frac{9}{12} + 52\frac{4}{12}$$

$$52\frac{14}{12} = 51\frac{16}{12}$$

$$-35\frac{9}{12} = 35\frac{9}{12}$$

$$16\frac{7}{12}$$

-16\frac{7}{12}

$$-12\frac{1}{6} - 3\frac{1}{3}$$

ADD or SUBTRACT?
Answer NEG or POS?

$$-12\frac{1}{6} + 3\frac{2}{6}$$

$$12\frac{1}{6}$$

$$+ 3\frac{2}{6}$$

$$15\frac{3}{6} = 15\frac{1}{2}$$

-15\frac{1}{2}

$$16\frac{4}{5} + -1\frac{1}{2}$$

ADD or SUBTRACT?
Answer NEG or POS?

$$16\frac{8}{10} + -1\frac{5}{10}$$

$$16\frac{8}{10}$$

$$- 1\frac{5}{10}$$

$$15\frac{3}{10}$$

15\frac{3}{10}

$$2\frac{4}{9} + -10\frac{1}{6}$$

ADD or SUBTRACT?
Answer NEG or POS?

$$2\frac{8}{18} + -10\frac{3}{18}$$

$$10\frac{3}{18} = 9\frac{21}{18}$$

$$-2\frac{8}{18} = 2\frac{8}{18}$$

$$7\frac{13}{18}$$

-7\frac{13}{18}