Math 7 Notes
(Section 4-3)
Adding & Subtracting Like Fractions

Recall:
  *To add or subtract fractions you must have a __Common denominator__ .

* Addition Rules:
  (Same signs)?   or   (Different signs)?

$-6 + {}^-3 = {}^-9$

Add absolute values
Attach sign

$-6 + 3 = {}^-3$

Subtract absolute values
use sign of one with
larger abs. value

* Subtraction = Addition of the additive inverse

$-6 - 3$ $7 \ominus 9$

$-6 + {}^-3$ $7 + {}^-9$

$\boxed{{}^-9}$

Find each sum or difference. Write answer in (simplest form.)

$$\frac{2}{15} - \frac{11}{15}$$

$$\frac{2}{15} + \frac{{}^-11}{15}$$

$$\frac{2 + {}^-11}{15}$$

$$\frac{{}^-9 \div 3}{15 \div 3}$$

$$\boxed{\frac{{}^-3}{5}}$$

$$-\frac{5}{9} - \frac{2}{9}$$

$$\frac{{}^-5}{9} + \frac{{}^-2}{9}$$

$$\frac{{}^-5 + {}^-2}{9}$$

$$\boxed{\frac{{}^-7}{9}}$$

Find each sum or difference. Write answer in simplest form.

$$-\frac{6}{7} + \left(-\frac{5}{7} \right)$$

$$\frac{{}^-6 + {}^-5}{7}$$

$$\frac{{}^-11}{7}$$

$$\boxed{-1\frac{4}{7}}$$

$$\frac{4}{5} + \left(-\frac{3}{5} \right)$$

$$\frac{4 + {}^-3}{5}$$

$$\boxed{\frac{1}{5}}$$

Evaluate each expression. $a = -\frac{5}{12}$ $b = \frac{1}{12}$ $c = -\frac{7}{12}$

$a + b + c$

$$\frac{{}^-5}{12} + \frac{1}{12} + \frac{{}^-7}{12}$$

$$\frac{{}^-5 + 1 + {}^-7}{12}$$

$$\boxed{\frac{{}^-11}{12}}$$

$a - c$

$$\frac{{}^-5}{12} - \frac{{}^-7}{12}$$

$$\frac{{}^-5}{12} + \frac{7}{12}$$

$$\frac{{}^-5 + 7}{12}$$

$$\frac{2}{12} \boxed{\frac{1}{6}}$$

Evaluate each expression. $a = -\frac{5}{12}$ $b = \frac{1}{12}$ $c = -\frac{7}{12}$

c - b	a + c

$$\frac{-7}{12} - \frac{1}{12}$$

$$\frac{-7}{12} + \frac{-1}{12}$$

$$\frac{-7 + -1}{12}$$

$$\frac{-8}{12} = \boxed{\frac{-2}{3}}$$

$$\frac{-5}{12} + \frac{-7}{12}$$

$$\frac{-5 + -7}{12}$$

$$\frac{-12}{12}$$

$$\boxed{-1}$$

Word Problems:

1) A recipe calls for $\frac{5}{8}$ teaspoons of cinnamon and $\frac{3}{8}$ teaspoons of baking soda. How many more teaspoons of cinnamon are used than baking soda?

$$\frac{5}{8} - \frac{3}{8}$$
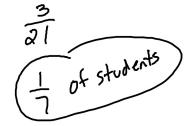
$$\frac{2}{8}$$

$$\boxed{\frac{1}{4} \ tsp}$$

Word Problems:

2) Sara ran $\frac{3}{4}$ miles on Saturday and $\frac{3}{4}$ miles on Sunday. How many miles did she run on the weekend?

$$\frac{3}{4} + \frac{3}{4}$$

$$\frac{6}{4} \longrightarrow 1\frac{2}{4} \rightarrow 1\frac{1}{2}$$

$$\frac{3}{2}$$

$$\boxed{1\frac{1}{2} \ miles}$$

Word Problems:

3) In Mr. Easton's block C math class, $\frac{13}{21}$ of the students got an A on their math test. In his E block class, $\frac{16}{21}$ of the students got an A. What fraction more of the students got an A in Mr. Easton's E period class than in his C period class?

$$\frac{16}{21} - \frac{13}{21}$$

$$\frac{3}{21}$$

$$\boxed{\frac{1}{7} \ of \ students}$$

$$\frac{-5}{9} - \frac{7}{9}$$

$$\frac{-5 + -7}{9}$$

$$\frac{-12}{9} = \frac{-4}{3}$$

$$\boxed{-1\frac{1}{3}}$$

$$\frac{-7}{12} - \frac{1}{12} + \frac{5}{12}$$

$$\frac{-7}{12} + \frac{-1}{12} + \frac{5}{12}$$

$$\frac{-7 + -1 + 5}{12}$$

$$\frac{-3}{12} = \boxed{\frac{-1}{4}}$$