CLASS NOTES: **Date** _____

Bits & Pieces II

Subtraction Algorithms

Below are most of the algorithms that you and your classmates came up with in class. Please choose 1 or 2 algorithms that you will use on a regular basis.

Vertical set-up with wholes and fractions separated

$$5\frac{3}{4}-1\frac{3}{8}=$$

$$\begin{array}{r|l} 5 & \frac{3}{4}\left(\times\frac{2}{2}\right)=\frac{6}{8} \\ -\ 1 & \frac{3}{8}\left(\times\frac{1}{1}\right)=\frac{3}{8} \\ \hline 4 & \frac{3}{8}=4\frac{3}{8} \end{array}$$

$+$

Vertical set-up with mixed numbers kept together

$$5\frac{3}{4}-1\frac{3}{8}=$$

$$5\frac{3}{4}\left(\times\frac{2}{2}\right)=5\frac{6}{8}$$

$$-\ 1\frac{3}{8}\left(\times\frac{1}{1}\right)=1\frac{3}{8}$$

$$4\frac{3}{8}$$

Horizontal set-up with mixed numbers kept together

$$5\frac{3}{4}\left(\times\frac{2}{2}\right)-1\frac{3}{8}\left(\times\frac{1}{1}\right)=$$

$$5\frac{6}{8}-1\frac{3}{8}=$$

$$4\frac{3}{8}$$

Convert to percents, subtract percents, convert back to fraction

$$3\frac{4}{10}-1\frac{1}{10}=$$

$$340\%-110\%=$$

$$230\%=2\frac{3}{10}$$

Subtraction Algorithms

Converting mixed numbers to improper fractions, subtracting, then converting back to mixed numbers	**Borrow from the whole number when the first fraction is smaller than the second fraction**
$5\frac{3}{4}-1\frac{3}{8}=$ $5\frac{3}{4}\left(\times\frac{2}{2}\right)=5\frac{6}{8}=\frac{46}{8}$ $-\ 1\frac{3}{8}\left(\times\frac{1}{1}\right)=1\frac{3}{8}=\frac{8}{8}$ $\frac{35}{8}=4\frac{3}{8}$	$5\frac{1}{6}-2\frac{3}{4}=$ $5\frac{1}{6}\left(\times\frac{2}{2}\right)=5\frac{2}{12}=4\frac{14}{12}$ (4, $\frac{12}{12}$) $-\ 2\frac{3}{4}\left(\times\frac{3}{3}\right)=2\frac{9}{12}=2\frac{9}{12}$ $2\frac{5}{12}$
2nd Example: Borrow from the whole number when the first fraction is smaller than the second fraction	**2nd Example: Converting mixed numbers to improper fractions, subtracting, then converting back to mixed numbers**
$8-2\frac{3}{8}=$ $8=7\frac{8}{8}$ $-\ 2\frac{3}{8}=2\frac{3}{8}$ $5\frac{5}{8}$	$8-2\frac{3}{8}=$ $8=\frac{64}{8}$ $-\ 2\frac{3}{8}=\frac{19}{8}$ $\frac{45}{8}=5\frac{5}{8}$