CLASS NOTES: **Date** _____

Bits & Pieces II

Multiplication 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.

Multiplying a fraction by a fraction horizontally.

$\frac{2}{5} \times \frac{3}{4} =$

$$\frac{2}{5} \times \frac{3}{4} = \frac{6}{20}\left(\div \frac{2}{2}\right) = \frac{3}{10}$$

reduce

(answer in simplest/ lowest terms)

Multiplying a whole number by a fraction.

$\frac{2}{5} \times 7 =$

$$\frac{2}{5} \times 7 =$$

$$\frac{2}{5} \times \frac{7}{1} = \frac{14}{5} = 2\frac{4}{5}$$

simplify and reduce

Multiplying a whole number by a mixed number, converting both first.

$8 \times 2\frac{3}{4} =$

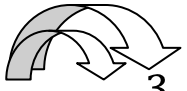
$$8 \times 2\frac{3}{5}$$

$$\frac{8}{1} \times \frac{13}{5} = \frac{104}{5} = 20\frac{4}{5}$$

simplify and reduce

Multiplying a whole number by a mixed number, multiply each part separately.

$8 \times 2\frac{3}{4} =$



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

$$8 \times 2 = 16$$

$$\frac{8}{1} \times \frac{3}{5} = \frac{24}{5} = 4\frac{4}{5}$$

$$16 + 4\frac{4}{5} = 20\frac{4}{5}$$

Multiplication Algorithms

Multiplying a mixed number by a mixed number, converting both first.

$1\frac{2}{3} \times 3\frac{1}{4} =$

$$1\frac{2}{3} \times 3\frac{1}{4} =$$

$$\frac{5}{3} \times \frac{13}{4} = \frac{65}{12} = 5\frac{5}{12}$$

Multiplying a mixed number by a mixed number, multiply each part separately.

$$1\frac{2}{3} \times 3\frac{1}{4} =$$

	1	$\frac{2}{3}$
3	3	$\frac{6}{3} = 2$
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{2}{12} = \frac{1}{6}$

$$3 + 2 + \frac{1}{4}\left(\times \frac{3}{3}\right) + \frac{1}{6}\left(\times \frac{2}{2}\right) =$$

$$3 + 2 + \frac{3}{12} + \frac{2}{12} = \mathbf{5\,\frac{5}{12}}$$

Multiplying a mixed number by a mixed number, convert to decimals first.

$$1\frac{2}{5} \times 2\frac{1}{4} =$$

$$1.4 \times 2.25 =$$

$$\begin{array}{r} 2.25 \\ \times\ 1.4 \\ \hline 900 \\ +\ 2250 \\ \hline 3.150 \end{array} = 3\frac{15}{100} = 3\frac{3}{20}$$