CLASS NOTES: **Date** _____
Bits & Pieces II

Division Algorithms

Below are most of the algorithms that you and your classmates came up with in class. All of these algorithms will be helpful. You will need to know how to divide each of the following categories:

Dividing a fraction by a fraction.	**Dividing a whole number by a fraction.**
$$\frac{2}{5} \div \frac{1}{4} =$$ keep, change sign, change (flip) $$\frac{2}{5} \times \frac{4}{1} = \frac{8}{5} = 1\frac{3}{5}$$ multiply across horizontally (answer in simplest/ lowest terms)	Put the whole number over 1 $$8 \div \frac{1}{3} =$$ $$\frac{8}{1} \div \frac{1}{3} =$$ keep, change sign, change (flip) $$\frac{8}{1} \times \frac{3}{1} = \frac{24}{1} = 24$$ multiply across horizontally simplify and reduce
Dividing a fraction by a whole number.	**Dividing a mixed number by a fraction or whole number.**
$$\frac{1}{3} \div 8 =$$ Put the whole number over 1 $$\frac{1}{3} \div \frac{8}{1} =$$ keep, change sign, change (flip) $$\frac{1}{3} \times \frac{1}{8} = \frac{1}{24}$$ multiply across horizontally (Fraction is already in simplest form)	Convert mixed number to improper fraction $$2\frac{3}{4} \div \frac{1}{5} =$$ $$\frac{11}{4} \div \frac{1}{5} =$$ keep, change sign, change (flip) $$\frac{11}{4} \times \frac{5}{1} = \frac{55}{4} = 13\frac{3}{4}$$ multiply across horizontally simplify and reduce

Division Algorithms

Dividing a fraction or whole number by a mixed number.	**Dividing and mixed number by a mixed number.**
$$\frac{3}{4} \div 1\frac{1}{2} =$$ Convert mixed number to improper fraction $$\frac{3}{4} \div \frac{3}{2} =$$ keep change sign change (flip) $$\frac{3}{4} \times \frac{2}{3} = \frac{6}{12} = \frac{1}{2}$$ multiply across horizontally simplify and reduce	$$3\frac{1}{4} \div 1\frac{2}{3} =$$ Convert mixed number to improper fraction $$\frac{13}{4} \div \frac{5}{3} =$$ keep change sign change (flip) $$\frac{13}{4} \times \frac{3}{5} = \frac{39}{20} = 1\frac{19}{20}$$ multiply across horizontally simplify and reduce
Convert to a decimal, divide, then convert back.	**** There are many other algorithms.**
$$3\frac{1}{4} \div 1\frac{1}{4} =$$ $$3.25 \div 1.25 =$$ $$1.125 \overline{)3.25}^{\,2.6}$$ $$2.6 = 2\frac{6}{10}\left(\div \frac{2}{2}\right) = 2\frac{3}{5}$$ convert back to fraction simplify and reduce	