Name: _____ Period: _____ Date: _____

Converting Fractions and Decimals Guide Notes Math 8

Converting a Fraction to a Decimal

To convert a fraction to a decimal, divide the numerator by the denominator.

To convert a fraction to a decimal, write an equivalent fraction (if possible) whose denominator is 10, 100, or 1000.

Remember that the numerator is the dividend and the denominator is the divisor.

A terminating decimal is a decimal with a finite number of digits after the decimal point.

A repeating decimal is a decimal in which one digit or a group of digits is repeated without end.

Sample Problem 1: **Convert each fraction to a decimal, then determine if its decimal expansion is repeating or terminating.**

a. $\frac{3}{4}$

b. $\frac{3}{11}$

c. $\frac{12}{128}$

d. $\frac{3}{16}$

Converting a Decimal to a Fraction

A terminating decimal can be written as a fraction simply by writing it as decimal fractions.

Sample problem 2: Convert each terminating decimal to a fraction.

a. 1.25

b. 4.5

c. 0.04

d. -5.12

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A repeating decimal can be written as a fraction.

Follow these steps, to change each repeating decimal to a fraction.

Step 1: Let x equal the repeating decimal.

Step 2: Multiply by powers of 1, 10, or 100 to create 2 equations that isolate the repeating part of the decimal.

Step 3: Subtract the equations to remove the repeating part of the decimal.

Step 4: Solve the resulting equation and simplify the fraction.

Sample problem 3: Convert each repeating decimal to a fraction.

a. $0.666666\ldots\ldots$

b. $1.252525\ldots\ldots$

c. $0.181818\ldots\ldots$

d. $0.3717171717\ldots\ldots$