



Name _____ Per _____

Converting Fractions ↔ Decimals

To convert fractions → decimals and decimals → fractions use the following strategies:



Remember: when converting from decimals to fractions the place value is your denominator.

Strategy #1: Decimals to Fractions: The Easy Probs (rewrite & simplify)

****The place value is the denominator****

$$\text{EX \#1: } 0.35 = \frac{35}{100} \div \frac{5}{5} = \frac{7}{20}$$

$$\text{EX \#2: } 2.17 = 2 \frac{17}{100}$$

$$\text{EX \#3: } 0.002 = \frac{2}{1000} \div \frac{2}{2} = \frac{1}{500}$$

#2: Fractions to Decimals: The Middle Level Probs

Ex #1: Straight conversion:

$$\frac{3}{10} = 0.3$$

Ex #2: Compatible Numbers

$$5 \frac{1}{4} = 5 \frac{1}{4} = 5 \frac{x}{100} = 5 \frac{25}{100} = 5.25$$

#3: Fractions to Decimals: The Hard Probs (long divide)

Ex #1: $\frac{3}{8}$

** This fraction can't be converted using decimal place value or compatibility. What's left? You have to long divide:

Convert to a Decimal:

$\frac{3}{8} \rightarrow$ Dividend
 $\frac{3}{8} \rightarrow$ Divisor

$\frac{3}{8} = 0.375$

Does this number terminate (end with a remainder of zero) or repeat?

Ex #2: $\frac{1}{3}$

** Again, this fraction can't be converted using decimal place value or compatibility. What's left? You have to long divide:

Does this number terminate (end with a remainder of zero) or repeat?

When a decimal repeats write it using a repeating bar by placing a floating bar over the digit(s) that repeat. This is called bar notation:

EX #1: $.333 = \overline{.3}$

EX #2: $5.6363 = 5.\overline{63}$

EX #3: $12.5222 = 12.\overline{52}$

**Sometimes fractions don't terminate by the thousandths place but they don't repeat, either. In those cases, divide to the thousandths place and round back to the hundredths.