

Unit 3.1

FRACTIONS TO DECIMALS

Remember:

A FRACTION $\left\{ \begin{array}{l} \text{IS A DIVISION} \\ \text{2 PARTS} = \frac{\text{NUMERATOR}}{\text{DENOMINATOR}} \end{array} \right.$

$$\frac{2}{3} \rightarrow 2 \div 3$$

NUMERATOR
DENOMINATOR

$$\frac{7}{9} \rightarrow 7 \div 9$$

NUMERATOR
DENOMINATOR

TO CONVERT FRACTIONS TO DECIMALS

EASY! \rightarrow DIVIDE NUMERATOR BY DENOMINATOR

$$\frac{2}{3} = 0.666666 \quad \text{Divide!} \quad \frac{5}{6} = 0.833333$$

$$\frac{1}{4} = 0.25$$

(2 TYPES OF DECIMALS)

TERMINATING DECIMALS

• ARE DECIMAL IN WHICH EACH DECIMAL HAS A DEFINITE NUMBER OF DECIMAL PLACES

↳ IN OTHER WORDS: → DECIMAL DIGITS DON'T HAVE A PATTERN!
↳ DECIMAL DIGITS DON'T HAVE A PATTERN OF REPEITION.

$$\frac{1}{10} = 0.1$$

$$\frac{13}{200} = 0.065$$

$$\frac{11}{20} = 0.55$$

REPEATING DECIMALS

• SOME DIGITS IN EACH REPEATING DECIMAL REPEAT FOREVER

• WE DRAW A BAR OVER THE DIGITS THAT REPEAT

Example:

$$\frac{4}{33} = 4 \div 33 = 0.1212121 \rightarrow \text{The } 12 \text{ REPEATS} \rightarrow 0.\overline{12}$$

$$\frac{73}{90} = 73 \div 90 = 0.8111111 \rightarrow \text{The } 1 \text{ REPEATS} \rightarrow 0.8\overline{1}$$

$$\frac{3}{7} = 3 \div 7 = 0.428571428571428 \rightarrow \text{The } 428571 \text{ REPEATS} \rightarrow 0.\overline{428571}$$

LOOK AT THESE PATTERNS

when the denominator is

99

$$\frac{1}{99} = 0.\overline{01}$$

$$\frac{2}{99} = 0.\overline{02}$$

$$\frac{3}{99} = 0.\overline{03}$$

$$\frac{9}{99} = 0.\overline{09}$$

$$\frac{15}{99} = 0.\overline{15}$$

$$\frac{43}{99} = 0.\overline{43}$$

$$\frac{67}{99} = 0.\overline{67}$$

So, FOR FRACTIONS WITH DENOMINATOR 99

THE DIGITS IN THE NUMERATOR OF THE FRACTION

ARE THE REPEATING DECIMAL DIGITS

this became this

$$\frac{1}{99} = 0.\overline{01}$$

$$\frac{15}{99} = 0.\overline{15}$$

$$\frac{77}{99} = 0.\overline{77}$$