

Lesson 2.1a

Fractions & Mixed Numbers as Decimals

EQ: How do we write **FRACTIONS** and **MIXED NUMBERS** as DECIMALS?

Rational Number- a number that can be written as $\frac{a}{b}$ where a & b are integers and $b \neq 0$.

Terminating Decimal- a decimal that ends
ex: 1.5, -0.25, 10.63

Repeating Decimal- a decimal that has a pattern that repeats.

Writing a FRACTION as a DECIMAL

Step 1- Using long division, divide the TOP number by the BOTTOM number.

Ex. $\frac{5}{11}$

Handwritten long division of 5 divided by 11. The result is 0.4545 with a bar over the 45. The steps are: 11 into 5.0000 gives 0.4, remainder 60; 11 into 60 gives 5, remainder 50; 11 into 50 gives 4, remainder 60; 11 into 60 gives 5, remainder 50; 11 into 50 gives 4, remainder 60; 11 into 60 gives 5, remainder 50. Arrows point down from the 45 to the next 45.

Step 2- Stop when the remainder is 0, or continue 4 places past the decimal to see if the decimal repeats or stops.

Ex: .4545 repeats \rightarrow $\overline{.45}$ so, $\frac{5}{11} = \overline{.45}$

Writing a MIXED NUMBER as a DECIMAL

Step 1- Convert the mixed number to a fraction.

- Multiply the whole number by the denominator.
- Add the product to the numerator.
- Place the sum as the numerator over the original denominator.

Ex: $2\frac{1}{4} \rightarrow$ a. $2 \cdot 4 = 8 \rightarrow$ b. $8 + 1 = 9 \rightarrow$ c. $\frac{9}{4}$

Step 2- Follow the steps for writing a fraction as a decimal.

Ex. $\frac{9}{4}$

Handwritten long division of 9 divided by 4. The result is 2.25. The steps are: 4 into 9.00 gives 2, remainder 10; 4 into 10 gives 2, remainder 20; 4 into 20 gives 5, remainder 0. Arrows point down from the 25 to the next 25.

$2\frac{1}{4} = \frac{9}{4} = 2.25$

ON YOUR OWN: IN YOUR NOTEBOOK

Write each as a DECIMAL.

1. $\frac{6}{5}$

2. $-7\frac{3}{8}$

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

4. $1\frac{5}{27}$