Terminating Decimal and Repeating or Non-terminating decimals.

The word **"terminate"** means **"end"** or **"stop."**

A **terminating decimal** is one that has a set number of digits and ends after the decimal point.

It is a type of rational number.

When you divide the numerator (top number) by the denominator (bottom number) and the result has **no remainder (0)**, you have a terminating decimal.

Terminating Decimal

Examples are:

0.87, 82.25, 9.527,

224.9803

A **repeating or non-terminating decimal** has an infinite number of digits and goes on forever without stopping. It continues endlessly, and some digits start to repeat.

When you divide the numerator (top number) by the denominator (bottom number) and notice that the **remainder starts repeating**, you have a repeating or non-terminating decimal. This type of decimal can also be turned into a **fraction**.

Repeating or Non-Terminating Decimal

Examples are:

0.333..., 0.00111..., and 1.234234...

A **vinculum** is a horizontal line placed over an expression to indicate that everything below it is one group.

Vinculum

For example, in the decimal number 0.333, the line over the 3s shows that the 3 repeats indefinitely. This makes it a repeating, non-terminating decimal.

$$0.\overline{333}$$