Rational Numbers

6th Grade Mathematics

A **rational number** is any number that can be written as a fraction n/d , where n and d are integers and $d \neq 0$.

A **terminating decimal** is any fraction can be written as a decimal by dividing the numerator by the denominator. If the division ends or terminates, because the remainder is zero.

A **repeating decimal** happens if the division leads to a repeating block of one or more digits (where all digits are not zeros). So 0.13333… = 0.13.

Irrational numbers can be written only as decimals that do *not* terminate or repeat. They are normally square roots that don't work. Give an example of an irrational number.

Ex. 1: Evaluate. Write in simplest form.

if a = -4 and b = -6

$\frac{a}{b}$

Substitute for “a” and “b”.

What is in common with both?

What are we left with?

$$\frac{-4}{-6} = \frac{-1 \cdot 2 \cdot 2}{-1 \cdot 2 \cdot 3} = \frac{2}{3}$$

Ex. 2: Evaluate. Write in simplest form.

if a = -2 and b = 3

$$\frac{2a - 3}{b}$$

Substitute for “a” and “b”.

Use order of operations.

Divide?

$$\frac{2\bullet(-2) - 3}{3} = \frac{-4 - 3}{3} = \frac{-7}{3} = -2\frac{1}{3}$$