Rational & Irrational Numbers; Solving Non-Linear Equations

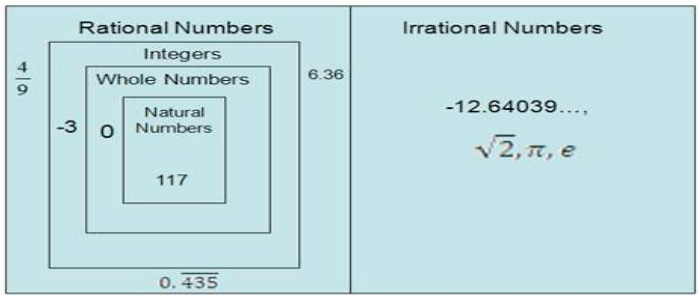
Math 2: Unit 8 | Anaheim Union High School District

Why are we studying this?

In this unit we will extend our knowledge about the real number system to include irrational numbers. Students will learn that not all numbers can be written as a ratio of two integers or as terminating or repeating decimals. Irrational numbers often have special names such as Pi (π), which students have explored when investigating the ratio between the circumference and diameter of a circle. It is important that students know that the set of real numbers is infinite, and each real number can be associated with a unique point on the number line.

Students will extend this foundational knowledge from grade eight into high school with content involving conic sections (circles, ellipses), biology (growth and decay) and physics, such as linear velocity of the earth.

Real Numbers



Math Topics Addressed in this Unit:

- Estimating Roots
-Solving Non-Linear Equations
-Writing and Comparing Irrational and Rational Numbers

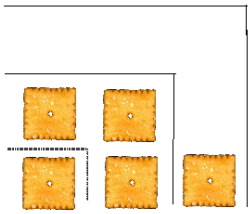
A Note About Homework:

Homework in this unit spirals the concepts from prior units of instruction, as well as current topics to support understanding of rational and irrational numbers and solving non-linear equations.

Dear Student & Parent/Guardian,

This unit involves extending our knowledge of the real number system to now include irrational numbers. We will explore irrational numbers by looking at Pythagoras's thoughts about squares and their side lengths by building square models with Cheez-its and looking at the side lengths of each model. Students will develop a conceptual understanding of the relationship between rational numbers and their fractional equivalent, as well as being able to locate these numbers on a number line.We will also extend our knowledge of solving equations to solving non-linear equations, such as $x^2 = 25$ and $x^3 = 8$ and how these equations might help us solve problems in context.

-AUHSD Math Teachers



Root	1	2	3	4	5	6	7
Square	1	4					

Sample question we will be able to answer:

Using the pattern in the diagram and table, how many Cheez-its will there be in a square that's eight Cheez-its wide? Nine Cheez-its wide? n Cheez-its wide?