

LESSON 1-1/1-2

Rational/Irrational Numbers

8/29/2019

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Goal: I will be able to determine if a number is rational or irrational.

Tool Bag
Formulas, Equations, Vocabulary, etc.

Here's How... Notes & Examples

In Science we classify animals based on characteristics.

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Square Root

$$\sqrt{\quad} \quad \sqrt{x^2} = x \quad \sqrt{49} = \sqrt{7^2} = 7$$

Perfect Squares

1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144

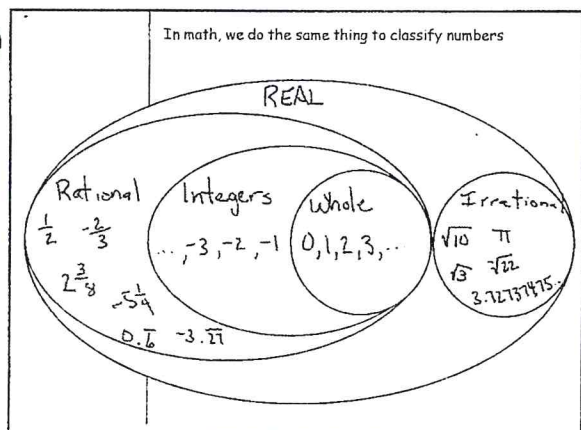
$1^2 \quad 2^2 \quad 3^2 \quad 4^2 \quad 5^2 \quad 6^2$

169, 196, 225, 400, 625

$13^2 \quad 14^2 \quad 15^2 \quad 20^2 \quad 25^2$

$\sqrt{64} = 8 \quad \sqrt{121} = \sqrt{11^2} = 11$

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What if it's NOT a perfect square?

$\sqrt{10}$ not a perfect square

$\sqrt{50}$

Irrational Number

has an infinite number of non-repeating digits to right of the decimal

0.101001000100001...

$\pi = 3.1415926...$

$\sqrt{15}$

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Rational Number

any number that can be written as a fraction

$$\frac{a}{b} \quad \text{where } b \neq 0$$

or repeating decimal

Examples

$\frac{1}{2} \quad -\frac{3}{4} \quad 0.\bar{6}$

$0.\overline{273} \quad 0.273273273273273273...$

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Rational or Irrational?

R R I R

-7 $1\frac{5}{8}$ $\sqrt{90}$ $\sqrt{49}$

R I

$-\sqrt{16}$ 3.7272272227222...

R

$52.\overline{634}$