

Question: What's $\frac{6}{0} = ?$

$\frac{6}{2} = 3$ is equivalent to $b = 2.3$

$\frac{6}{0} = 27$ $b = 0.27 = 0$
undefined

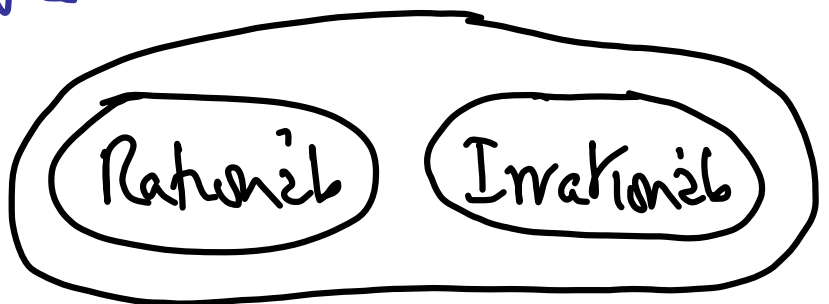
$\frac{0}{0} = 1776$ $0 = 0.1776 = 0$
undefined

Irrational Numbers

Ex: .232232223...

π , $\sqrt{2}$

Real Numbers



$$6 - 2 = 4$$

$$2 - 6 = -4$$

$$\frac{6}{2} = 3$$

$$\frac{2}{6}$$

$$x^2 = 9$$

$$x^2 = 8$$

$$x = 3, -3$$

$$x = \sqrt{8}, -\sqrt{8}$$

$$x^2 = 1$$

$$x^2 = -1$$

$$x = 1, -1$$

$$x = \sqrt{-1}, -\sqrt{-1}$$
$$i, -i$$

Imaginary Numbers

bi , b some real number

Complex Numbers $a+bi$ a, b real

Quick Review:

Fractions

Reduce

$$\frac{6}{10} = \frac{3}{5}$$

$$\frac{12}{63} = \frac{4}{21}$$

$$\frac{4}{7} = \frac{4}{7}$$

Aside: what do parentheses mean?

$(2)(3) = 6$ ← what operation is asked for?

$$(2) + (3) = 5$$

Multiplicasi

$$\frac{1}{2} \cdot \frac{3}{4} = \frac{3}{8}$$

$$\frac{\overset{1}{\cancel{3}}}{4} \cdot \frac{\overset{5}{\cancel{6}}}{\underset{2}{\cancel{2}}} = \frac{5}{8}$$

$$\frac{\overset{1}{\cancel{5}}}{\underset{2}{\cancel{12}}} \cdot \frac{\overset{1}{\cancel{6}}}{\underset{5}{\cancel{23}}} = \frac{1}{10}$$

$$2\frac{1}{2} \cdot \frac{3}{4}$$

Solving Equations

Exponents

Examples:

Number of stars in the Andromeda Galaxy: 200,000,000,000

**mass of an alpha particle: 0.000 000 000 000 000 000 000 000 006
645 kg**

Avogadro's number: 602 000 000 000 000 000 000 000

Inter Alg & Trig: 5.2 - Introduction to Polynomials

monomial: a constant, variable, or a product of constants and variables

Coefficient

Degree

Polynomial: one-variable and in general

Binomial

Trinomial

Degree of a polynomial

Writing a polynomial in descending (or ascending order)

Combining like terms & write in descending order

p 395

5.3 Adding and Subtracting Polynomials

p 406

5.4 Exponent Rules and Multiplying Monomials

Product Rule for Exponents

$$a^m a^n = a^{m+n}$$

Raising a Power to a Power

$$(a^m)^n = a^{mn}$$

p 417

5.5 Multiplying Polynomials; Special Products

Multiplying a Polynomial by a Monomial

Binomial Multiplication

Multiplying $23 \cdot 15$

$$\begin{array}{r} 23 \\ \cdot 15 \\ \hline \end{array}$$

compare with

$$\begin{array}{r} x+4 \\ x+3 \\ \hline \end{array}$$

Multiply Two Binomials

$$(x+4)(x+3)$$

Special Products

Conjugates

Squaring a Binomial

5.6 Exponent Rules and Dividing Polynomials

Quotient Rule

$$\frac{x^6}{x^2}$$

Dividing a Polynomial by a Monomial

Exponent Rules (p 444)

p 445

p 454

p 458