

$$2 + 3 \cdot 4^2 = 50$$

$$2 + 3 = 5$$

$$2 + (-3) = -1$$

$$-2 + 3 = 1$$

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

$$(2)(3) = 6$$

$$2(3) = 6$$

$$(2)3 = 6$$

$$2 \cdot 3 = 6$$

$$2(3) = 6$$

$$-2(3) = -6$$

$$2(-3) = -6$$

$$-2(-3) = 6$$

$$\frac{6}{2} = 3 \text{ is equivalent to } 6 = 2 \cdot 3$$

$$\frac{8}{0} = 3 \quad 8 = 0 \cdot 3 = 0$$

undefined

$$\frac{0}{0} = 47 \quad 0 = 0 \cdot 47 = 0$$

undefined

Irrational Numbers

Ex: .1010010001...

π , $\sqrt{2}$

Real Numbers

Irrational
Rationals

$$x^2 = 2$$

$$x = \pm \sqrt{2}$$

$$6 - 4 = 2$$

$$4 - 6 = -2$$

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

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

$$x^2 = 1$$

$$x = 1, -1$$

$$x^2 = -1$$

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

i

Imaginary Numbers

Complex Numbers $a+bi$

Quick Review:

Fractions

Reduce

$$\frac{4}{10} = \frac{2}{5} \quad . \quad \frac{4}{10} = \frac{2 \cdot 2}{2 \cdot 5} = \frac{2}{5}$$

$$\frac{3}{6} = \frac{1}{2}$$

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

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

$$\frac{2}{3} \cdot \frac{4}{5} = \frac{8}{15}$$

$$\frac{\cancel{8}^1}{\cancel{6}_1} \cdot \frac{\cancel{12}^2}{\cancel{5}_5} = \frac{2}{5}$$

$$2\frac{1}{2} \cdot \frac{3}{4} = \frac{\cancel{5}^1}{2} \cdot \frac{3}{4} = \frac{15}{8}$$

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