

## Intermediate Algebra and Trigonometry

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one 1, 1

five 5  $\sqrt{2}$   $\sqrt{2}$

seven 7

z 2z 2z

# Last of Characters

Natural Numbers

$$\{1, 2, 3, \dots\}$$

Whole Numbers

$$\{0, 1, 2, 3, \dots\}$$

Integers

$$\{\dots, -3, -2, -1, 0, 1, 2, 3, \dots\}$$

Rational Numbers

$$\left\{ \frac{a}{b} \mid a, b \text{ integers, } b \neq 0 \right\}$$

the set of all  $\frac{a}{b}$  such that

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

$$\frac{0}{0} = 0$$

$$0 = 0 \cdot 0 = 0$$

## **Quick Review:**

**Fractions**

**Solving Equations**

**Exponents**

### **Examples:**

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

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