

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

$$(2\frac{1}{2})(3\frac{5}{6}) = \frac{5}{2} \cdot \frac{23}{6} = \frac{115}{12}$$

$$\frac{\frac{2}{3} \cdot \frac{5}{4}}{\frac{4}{5} \cdot \frac{5}{4}} = \frac{\frac{2}{3} \cdot \frac{5}{4}}{1} = \frac{1}{3} \cdot \frac{5}{2} = \frac{5}{6}$$

$$\frac{\frac{3}{4}}{\frac{5}{6}} = \frac{3}{4} \cdot \frac{6}{5} = \frac{9}{10}$$

$$\frac{2\frac{1}{2}}{\frac{3}{5}} = \frac{2\frac{5}{2}}{\frac{3}{5}} = \frac{5}{2} \cdot \frac{5}{3} = \frac{25}{6}$$

$$\frac{2}{7} + \frac{3}{7} = \frac{5}{7}$$

(20)

$$\frac{4 \cdot 2}{4 \cdot 5} + \frac{1 \cdot 5}{4 \cdot 5} = \frac{8}{20} + \frac{5}{20} = \frac{13}{20}$$

(12)

$$\frac{2 \cdot 1}{2 \cdot 6} + \frac{3 \cdot 3}{4 \cdot 3} = \frac{2}{12} + \frac{9}{12} = \frac{11}{12}$$

(10)

$$\frac{2 \cdot 2}{2 \cdot 5} + \frac{3}{10} = \frac{4}{10} + \frac{3}{10} = \frac{7}{10}$$

(12)

$$\frac{3 \cdot 3}{3 \cdot 4} + \frac{5 \cdot 2}{6 \cdot 2} = \frac{9}{12} + \frac{10}{12} = \frac{19}{12} \text{ or } 1 \frac{7}{12}$$

⑩

$$2\frac{1}{2} + 3\frac{7}{10} =$$

$$\begin{array}{l} 5 \cdot 5 \\ 5 \cdot 2 \end{array} \frac{1}{2} + \frac{37}{10}$$

$$\begin{array}{r} 2\frac{1 \cdot 5}{2 \cdot 5} \quad \frac{5}{10} \\ + 3\frac{7}{10} \quad \frac{7}{10} \\ \hline 5\frac{12}{10} \end{array}$$

$$\frac{25}{10} + \frac{37}{10} = \frac{62}{10} = \frac{31}{5}$$

$$= 5 + \frac{12}{10}$$

$$= 5 + \frac{6}{5}$$

$$= 5 + 1\frac{1}{5}$$

$$= 6\frac{1}{5}$$

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

$$\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$$

$$\frac{2}{5} - \frac{5}{6} =$$

$$5\frac{1}{4} - 2\frac{3}{8} =$$

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