

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

$$3\frac{1}{4} \cdot 4\frac{2}{5} = \frac{13}{\cancel{4}} \cdot \frac{\cancel{22}}{5} = \frac{143}{10}$$

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

$$\frac{\frac{3}{4}}{\frac{5}{6}} = \frac{\cancel{4} \cdot \frac{3}{\cancel{2}}}{5 \cdot \frac{3}{\cancel{2}}} = \frac{9}{10}$$

$$\frac{2\frac{1}{2}}{\frac{2}{5}} = \frac{\frac{5}{2} \cdot \frac{5}{5}}{\frac{2}{5}} = \frac{5}{2} \cdot \frac{5}{2} = \frac{25}{4}$$

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

(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)

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

$$2 \frac{3}{4} + 5 \frac{1}{2} = \frac{11}{4} + \frac{11 \cdot 2}{2 \cdot 2} = \frac{11}{4} + \frac{22}{4}$$

$$\begin{array}{r} 2 \frac{3}{4} \\ + 5 \frac{1}{2} \\ \hline 7 \frac{5}{4} \end{array}$$

$$= \frac{33}{4}$$

$$\begin{aligned} 7 \frac{5}{4} &= 7 + \frac{5}{4} \\ &= 7 + 1 \frac{1}{4} \\ &= 8 \frac{1}{4} \end{aligned}$$

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$$3 \frac{3}{8} - 5 \frac{4}{6} = \frac{9}{24} - \frac{20}{24} = -\frac{11}{24}$$

$$7 \frac{5}{6} - 2 \frac{1}{4} =$$

(12)

$$\begin{array}{r} 7 \frac{5 \cdot 2}{6 \cdot 2} \quad \frac{10}{12} \\ - 2 \frac{1 \cdot 3}{4 \cdot 3} \quad \frac{3}{12} \\ \hline 5 \frac{7}{12} \end{array}$$

$$7 \frac{1}{4} - 2 \frac{5}{6} =$$

(12)

$$\begin{array}{r} \cancel{7} \frac{1 \cdot 3}{4 \cdot 3} \quad \frac{3}{12} \\ - 2 \frac{5 \cdot 2}{6 \cdot 2} \quad \frac{10}{12} \\ \hline 4 \frac{5}{12} \end{array}$$

$$\frac{53}{12}$$

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