Chapter 5.6 Special Products

Special Binomial Multiplication

(A) Difference of squares

Simplify:

(1) $(x+7)(x-7)$

(2) $(2x+5)(2x-5)$

(3) $(6x-2)(6x+2)$

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

Fractions

(eg) $(3r-\frac{1}{2})(3r+\frac{1}{2})$

(B) Square of a Binomial

Rule

1.
2.
3.

Simplify:

(1) $(x+3)^2$

(2) $(2x-3)^2$

(3) $(4x+3)^2$

(4) $(5x-6y)^2$

Higher Powers of Binomials

1.

2.

3.

① $(4x+1)^3$

eg $(x+7)^3$

② $(3x+2)^4$

③ $(6x+5)^5$

Chapter 5.7 Dividing Polynomials

Divisor

Dividend

Quotient

Remainder

Parts of Division

Division Forms

Division: Monomial by Monomial

1.
2.
3.

(eg) $\frac{12x^2}{3x}$

① $\frac{45x^{25}}{150x^{17}}$

Division Polynomial by Monomial

Note:-

(eg) $\frac{4x-6}{2}$

① $\frac{12x^2-6x+3}{3}$

② $\frac{5x^2+4x-8}{x}$

③ $\frac{18x^2-15x+24}{3x}$

Dividing by a negative Monomial

(eg) $\frac{(-15x+9)}{-3}$

① $\frac{-15x^4+6x^3-12x^2-6x+3}{-3x}$

② $\frac{-4x^3+25x^2+14x-8}{-2x}$

③ $\frac{-12p^5-8p^4-6p^3+5p^2}{-3p^3}$

Dividing a polynomial by a monomial with multiple variables

(eg) $\frac{45x^4y^3 + 30x^3y^2 - 60x^2y}{15x^2y}$

Dividing a Polynomial by a Binomial

1.
2.
3.
4.

(eg) $5\overline{)6782}$

5.

a.
b.
c.
d.
e.

(eg) $\frac{x^3+3x^2+5x+3}{x+1}$

① $\frac{2x^3-3x^2-5x+6}{x-1}$

② $\frac{13x^2+6x^3-2x-3}{2x-1}$

(eg) $\frac{2x^3+6x-4}{x+4}$

① $\frac{x^3-8}{x-2}$

eg $\frac{2m^5+m^4+6m^3-3m^2-18}{m^2+3}$