Special Products and Factors

1 $(x+y)^2 = x^2+2xy+y^2$

2 $(x-y)^2 = x^2-2xy+y^2$

3 $(x+y)^3 = x^3+3x^2y+3xy^2+y^3$

4 $(x-y)^3 = x^3-3x^2y+3xy^2-y^3$

5 $(x+y)^4 = x^4+4x^3y+6x^2y^2+4xy^3+y^4$

6 $(x-y)^4 = x^4-4x^3y+6x^2y^2-4xy^3+y^4$

7 $(x+y)^5 = x^5+5x^4y+10x^3y^2+10x^2y^3+5xy^4+y^5$

8 $(x-y)^5 = x^5-5x^4y+10x^3y^2-10x^2y^3+5xy^4-y^5$

9 $(x+y)^6 = x^6+6x^5y+15x^4y^2+20x^3y^3+15x^2y^4+6xy^5+y^6$

10 $(x-y)^6 = x^6-6x^5y+15x^4y^2-20x^3y^3+15x^2y^4-6xy^5+y^6$

11 $x^2-y^2 = (x-y)(x+y)$

12 $x^3-y^3 = (x-y)(x^2+xy+y^2)$

13 $x^3+y^3 = (x+y)(x^2-xy+y^2)$

14 $x^4-y^4 = (x-y)(x+y)(x^2+y^2)$

15 $x^5-y^5 = (x-y)(x^4+x^3y+x^2y^2+xy^3+y^4)$

16 $x^5+y^5 = (x+y)(x^4-x^3y+x^2y^2-xy^3+y^4)$

17 $x^6-y^6 = (x-y)(x+y)(x^2+xy+y^2)(x^2-xy+y^2)$

18 $x^4+x^2y^2+y^4 = (x^2+xy+y^2)(x^2-xy+y^2)$

19 $x^4+4y^4 = (x^2+2xy+2y^2)(x^2-2xy+2y^2)$