বীজগাণিতিক সূত্রাবলী📖

1.▶ $(a+b)^2 = a^2+2ab+b^2$
2.▶ $(a+b)^2 = (a-b)^2+4ab$
3.▶ $(a-b)^2 = a^2-2ab+b^2$
4.▶ $(a-b)^2 = (a+b)^2-4ab$
5.▶ $a^2 + b^2 = (a+b)^2-2ab.$
6.▶ $a^2 + b^2 = (a-b)^2+2ab.$
7.▶ $a^2-b^2 = (a+b)(a-b)$
8.▶ $2(a^2+b^2) = (a+b)^2+(a-b)^2$
9.▶ $4ab = (a+b)^2-(a-b)^2$
10.▶ $ab = \{(a+b)/2\}^2-\{(a-b)/2\}^2$
11.▶ $(a+b+c)^2 = a^2+b^2+c^2+2(ab+bc+ca)$
12.▶ $(a+b)^3 = a^3+3a^2b+3ab^2+b^3$
13.▶ $(a+b)^3 = a^3+b^3+3ab(a+b)$
14.▶ $a-b)^3 = a^3-3a^2b+3ab^2-b^3$
15.▶ $(a-b)^3 = a^3-b^3-3ab(a-b)$
16.▶ $a^3+b^3 = (a+b)(a^2-ab+b^2)$
17.▶ $a^3+b^3 = (a+b)^3-3ab(a+b)$
18.▶ $a^3-b^3 = (a-b)(a^2+ab+b^2)$
19.▶ $a^3-b^3 = (a-b)^3+3ab(a-b)$
20. $(a^2 + b^2 + c^2) = (a + b + c)^2 - 2(ab + bc + ca)$
21.▶ $2(ab + bc + ca) = (a + b + c)^2 - (a^2 + b^2 + c^2)$
22.▶ $(a + b + c)^3 = a^3 + b^3 + c^3 + 3(a + b)(b + c)(c + a)$
23.▶ $a^3 + b^3 + c^3 - 3abc = (a+b+c)(a^2 + b^2 + c^2 - ab - bc - ca)$
24.▶ $a3 + b3 + c3 - 3abc = ½(a+b+c)\{(a-b)^2+(b-c)^2+(c-a)^2\}$
25.▶ $(x + a)(x + b) = x^2 + (a + b)x + ab$
26.▶ $(x + a)(x - b) = x^2 + (a - b)x - ab$
27.▶ $(x - a)(x + b) = x^2 + (b - a)x - ab$
28.▶ $(x - a)(x - b) = x^2 - (a + b)x + ab$
29.▶ $(x+p)(x+q)(x+r) = x^3 + (p+q+r)x^2 + (pq+qr+rp)x + pqr$
30.▶ $bc(b-c) + ca(c-a) + ab(a-b) = -(b-c)(c-a)(a-b)$
31.▶ $a^2(b-c) + b^2(c-a) + c^2(a-b) = -(b-c)(c-a)(a-b)$
32.▶ $a(b^2 - c^2) + b(c^2 - a^2) + c(a^2 - b^2) = (b-c)(c-a)(a-b)$
33.▶ $a^3(b-c) + b^3(c-a) + c^3(a-b) = -(b-c)(c-a)(a-b)(a+b+c)$
34.▶ $b^2-c^2(b^2-c^2) + c^2a^2(c^2-a^2)+a^2b^2(a^2-b^2) = -(b-c)(c-a)(a-b)(b+c)(c+a)(a+b)$
35.▶ $(ab + bc+ca)(a+b+c) - abc = (a+b)(b+c)(c+a)$
36.▶ $(b+c)(c+a)(a+b) + abc = (a+b+c)(ab + bc + ca)$

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