

Binomial Theorem**Expand completely.**

1) $(a - b)^3$

2) $(b - 3)^4$

3) $(5n^4 + m^2)^3$

4) $(2m^2 + 1)^6$

5) $(3 - n^2)^4$

6) $(y + x)^4$

7) $(m - n^2)^5$

8) $(2x + 1)^3$

9) $(2x - 1)^6$

10) $(3x - 2y)^5$

Find each coefficient described.

11) Coefficient of m^8 in expansion of $(2 - m^4)^4$

12) Coefficient of y^4 in expansion of $(2y - 1)^6$

13) Coefficient of nm^2 in expansion of $(n - 5m)^3$

14) Coefficient of y^2x^3 in expansion of $(y - 2x)^5$

15) Coefficient of y^4 in expansion of $(1 + 2y)^6$

16) Coefficient of x^4 in expansion of $(x^2 + 2)^4$

17) Coefficient of x^3 in expansion of $(5x^3 + 1)^3$

18) Coefficient of x^4y in expansion of $(x^2 + y)^3$

19) Coefficient of y^3x^5 in expansion of $(y^3 - 2x)^6$

20) Coefficient of yx^4 in expansion of $(y + 2x)^5$

Find each term described.

21) 3rd term in expansion of $(2 + x)^4$

22) 3rd term in expansion of $(2a^4 - 1)^4$

23) 1st term in expansion of $(x + y)^4$

24) 1st term in expansion of $(4b^2 - 1)^3$

25) 2nd term in expansion of $(b + 2a^3)^4$

26) 3rd term in expansion of $(n - 5)^3$

27) 4th term in expansion of $(5x - y)^3$

28) 5th term in expansion of $(b^3 - a)^4$

29) 2nd term in expansion of $(2m + 1)^3$

30) 5th term in expansion of $(m + 3n)^4$

Binomial Theorem

Expand completely.

1) $(a - b)^3$

$a^3 - 3a^2b + 3ab^2 - b^3$

2) $(b - 3)^4$

$b^4 - 12b^3 + 54b^2 - 108b + 81$

3) $(5n^4 + m^2)^3$

$125n^{12} + 75n^8m^2 + 15n^4m^4 + m^6$

4) $(2m^2 + 1)^6$

$64m^{12} + 192m^{10} + 240m^8 + 160m^6 + 60m^4 + 12m^2 + 1$

5) $(3 - n^2)^4$

$81 - 108n^2 + 54n^4 - 12n^6 + n^8$

6) $(y + x)^4$

$y^4 + 4y^3x + 6y^2x^2 + 4yx^3 + x^4$

7) $(m - n^2)^5$

$m^5 - 5m^4n^2 + 10m^3n^4 - 10m^2n^6 + 5mn^8 - n^{10}$

8) $(2x + 1)^3$

$8x^3 + 12x^2 + 6x + 1$

9) $(2x - 1)^6$

$64x^6 - 192x^5 + 240x^4 - 160x^3 + 60x^2 - 12x + 1$

10) $(3x - 2y)^5$

$243x^5 - 810x^4y + 1080x^3y^2 - 720x^2y^3 + 240xy^4 - 32y^5$

Find each coefficient described.

11) Coefficient of m^8 in expansion of $(2 - m^4)^4$

24

12) Coefficient of y^4 in expansion of $(2y - 1)^6$

240

13) Coefficient of nm^2 in expansion of $(n - 5m)^3$

75

14) Coefficient of y^2x^3 in expansion of $(y - 2x)^5$

-80

15) Coefficient of y^4 in expansion of $(1 + 2y)^6$

240

16) Coefficient of x^4 in expansion of $(x^2 + 2)^4$

24

17) Coefficient of x^3 in expansion of $(5x^3 + 1)^3$

15

18) Coefficient of x^4y in expansion of $(x^2 + y)^3$

3

19) Coefficient of y^3x^5 in expansion of $(y^3 - 2x)^6$

-192

20) Coefficient of yx^4 in expansion of $(y + 2x)^5$

80

Find each term described.

21) 3rd term in expansion of $(2 + x)^4$

$24x^2$

22) 3rd term in expansion of $(2a^4 - 1)^4$

$24a^8$

23) 1st term in expansion of $(x + y)^4$

x^4

24) 1st term in expansion of $(4b^2 - 1)^3$

$64b^6$

25) 2nd term in expansion of $(b + 2a^3)^4$

$8b^3a^3$

26) 3rd term in expansion of $(n - 5)^3$

75n

27) 4th term in expansion of $(5x - y)^3$

$-y^3$

28) 5th term in expansion of $(b^3 - a)^4$

a^4

29) 2nd term in expansion of $(2m + 1)^3$

$$12m^2$$

30) 5th term in expansion of $(m + 3n)^4$

$$81n^4$$