The Binomial Theorem

Find each coefficient described.

- 1) Coefficient of x^2 in expansion of $(2 + x)^5$
- 2) Coefficient of x^2 in expansion of $(x+2)^5$
- 3) Coefficient of x in expansion of $(x + 3)^5$
- 4) Coefficient of b in expansion of $(3 + b)^4$
- 5) Coefficient of x^3y^2 in expansion of $(x-3y)^5$
- 6) Coefficient of a^2 in expansion of $(2a + 1)^5$

Find each term described.

7) 2nd term in expansion of $(y-2x)^4$

8) 4th term in expansion of $(4y + x)^4$

9) 1st term in expansion of $(a+b)^5$

10) 2nd term in expansion of $(y - x)^4$

Expand completely.

11)
$$(2m-1)^4$$

12)
$$(x - y)^3$$

13)
$$(x^4 - y)^5$$

14)
$$(2x^3 + 1)^5$$

15)
$$(y-x^2)^3$$

16)
$$(y^3 - 4x)^3$$

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Find each coefficient described.

- 1) Coefficient of x^2 in expansion of $(2 + x)^5$
- 3) Coefficient of x in expansion of $(x + 3)^5$ 405
- 5) Coefficient of x^3y^2 in expansion of $(x 3y)^5$

- 2) Coefficient of x^2 in expansion of $(x + 2)^5$
- 4) Coefficient of *b* in expansion of $(3 + b)^4$ 108
- 6) Coefficient of a^2 in expansion of $(2a + 1)^5$

Find each term described.

- 7) 2nd term in expansion of $(y 2x)^4$ -8 $y^3 x$
- 9) 1st term in expansion of $(a + b)^5$ a^5

- 8) 4th term in expansion of $(4y + x)^4$ $16yx^3$
- 10) 2nd term in expansion of $(y x)^4$ -4 y^3x

Expand completely.

11)
$$(2m-1)^4$$

 $16m^4 - 32m^3 + 24m^2 - 8m + 1$

13)
$$(x^4 - y)^5$$

 $x^{20} - 5x^{16}y + 10x^{12}y^2 - 10x^8y^3 + 5x^4y^4 - y^5$

15)
$$(y-x^2)^3$$

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

12)
$$(x - y)^3$$

 $x^3 - 3x^2y + 3xy^2 - y^3$

14)
$$(2x^3 + 1)^5$$

 $32x^{15} + 80x^{12} + 80x^9 + 40x^6 + 10x^3 + 1$

16)
$$(y^3 - 4x)^3$$

 $y^9 - 12y^6x + 48y^3x^2 - 64x^3$