Kuta Software - Infinite Algebra 2

Name_____

Date_____ Period____

The Binomial Theorem

Find each coefficient described.

1) Coefficient of x^2 in expansion of $(2 + x)^5$

$10(2)^3x^2 = 80$

2) Coefficient of x^2 in expansion of $(x + 2)^5$

$= 80$

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

$5x(3)^4 = 405$

4) Coefficient of b in expansion of $(3 + b)^4$

$= 108$

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

$10(x)(-3y)^2 = 90$

6) Coefficient of a^2 in expansion of $(2a + 1)^5$

$= 40$

Find each term described.

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

$-8y^3x$

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

$16x^3y$

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

a^5

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

$-4xy^3$

Expand completely.

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

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

12) $(x - y)^3$

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

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

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

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

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

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

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

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

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