

Algebra II Pre-AP -- Assignment 57
Binomial Theorem

Expand and simplify each expression in #1 - 8

A Problems (Required)	B Problems (For additional practice)
1) $(x + 3)^6$	1) $(y - 2)^5$
2) $(2y - 3)^4$	2) $(3x + 2)^4$
3) $(x^2 + 2y)^5$	3) $(a^2 - 3b)^6$
4) $(\sqrt{x} + 3)^4$	4) $(\sqrt{y} - 4)^4$
5) $\left(n - \frac{1}{n}\right)^6$	5) $\left(a + \frac{1}{a}\right)^5$
6) $(a^2 - 2ab + b^2)^3$	6) $(x^2 + 2xy + y^2)^3$
7) $(x - 2)^3(x + 2)^3$	7) $(y + 3)^4(y - 3)^4$
8) $(2 + 2i)^5$	8) $(1 - i)^5$

For #9 - 10, find and simplify the first 4 terms of each expansion.

9) $(a - b)^{14}$	10) $(x - 2y)^{14}$	9) $(a + b)^{14}$	10) $(a - b)^{19}$
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For #11 - 16, find and simplify the specified term in each expansion.

11) The term containing b^5 in $(a + 2b)^{20}$	11) The term containing b^4 in $(a + b)^{18}$
12) The 11 th term of $(x - t)^{14}$	12) The 6 th term of $(3a + 2b)^8$
13) The term containing b^{12} in $(2a + b^2)^9$	13) The term containing y^{14} in $(x^3 + y^2)^{32}$
14) The middle term of $(c^2 - 2d)^8$	14) The middle term containing $(c - d)^{10}$
15) The 3 rd term of $(3x^2 - 2y^3)^8$	15) The 3 rd term of $(2x^4 - 3y^3)^8$
16) The term containing a^{18} in $(a^3 - 2)^{10}$	16) The term containing x^{15} in $(x^3 - 3)^9$

Review problems -- No B Problems -- All are required.

17) The three basketball teams from Lowe High each play on Friday night. The probabilities that they will win are: varsity, 0.7; junior varsity, 0.6; freshman, 0.8. What is the probability of each event? <ol style="list-style-type: none"> a. All three teams win b. All three teams lose. c. Only the varsity team wins. d. Exactly one of the three teams wins. e. At least one team wins.
