Binomial Theorem Precalculus

1. Expand each binomial completely.

a $(x + 3)^6$

b $(2n - 3a)^3$

c $(1 + 3n^3)^4$

d $(u - 2v^2)^5$

e $(2a + b)^5$

f $(4x - 2y)^4$

2. Evaluate the following.

a ${}_{20}C_{15}$

b ${}_{10}C_{4}$

c ${}_{7}C_{3}$

d ${}_{8}C_{5}$

3. One term of $(3x + 2y)^{12}$ contains x^7. What is the exponent of y in that term?

Binomial Theorem Precalculus

MATH MONKS

1. Expand each binomial completely. Answers

a $(x + 3)^6$

$x^6 + 18x^5 + 135x^4 + 540x^3 + 1215x^2 + 1458x + 729$

b $(2n - 3a)^3$

$8n^3 - 36an^2 + 54na^2 - 27a^3$

c $(1 + 3n^3)^4$

$1 + 12n^3 + 54n^6 + 108n^9 + 81n^{12}$

d $(u - 2v^2)^5$

$u^5 - 10u^4v^2 + 40u^3v^4 - 80u^2v^6 + 80uv^8 - 32v^{10}$

e $(2a + b)^5$

$32a^5 + 80a^4b + 80a^3b^2 + 40a^2b^3 + 10ab^4 + b^5$

f $(4x - 2y)^4$

$256x^4 - 512x^3y + 384x^2y^2 - 128xy^3 + 16y^4$

2. Evaluate the following.

a ${}_{20}C_{15}$

15,504

b ${}_{10}C_4$

210

c ${}_7C_3$

35

d ${}_8C_5$

56

3. One term of $(3x + 2y)^{12}$ contains x^7. What is the exponent of y in that term?