

Pre-Calculus
Sec. 10.5
The Binomial Theorem

To find a Binomial Coefficient (from Pascal's Triangle):

$$\binom{n}{r} = {}_n C_r = \frac{n!}{(n-r)!(r!)}$$

Ex1) Evaluate the given binomial coefficient.

a) $3 C_2$

b) $\binom{6}{3}$

Ex2) Use the Binomial Theorem to expand each binomial and express the result in simplified form.

a) $(2x - 3)^4$

b) $(6m + 8)^3$

Finding a Particular Term in a Binomial Expansion

The $(r + 1)$ st term of the expansion of $(a + b)^n$ is

$$\binom{n}{r} a^{n-r} b^r.$$

Ex3) Find the term indicated in the expansion.

a) $(2x + y)^9$; fifth term

b) $(2x - y)^5$; fourth term