



Binomial Theorem - Polynomial with Two Integers and Triangle to Partly Expanded

Polynomial

1 Use Pascal's triangle to write the partly-expanded form (leave each power un-evaluated).

$$\begin{array}{c}
 1 \\
 1 \quad 1 \\
 1 \quad 2 \quad 1 \\
 1 \quad 3 \quad 3 \quad 1 \\
 1 \quad 4 \quad 6 \quad 4 \quad 1 \\
 1 \quad 5 \quad 10 \quad 10 \quad 5 \quad 1 \\
 (-3x + 2)^2
 \end{array}$$

A $1 \cdot (-3)^2 x^2 + 1 \cdot (-3)^1 \cdot (2)^1 x + 0 \cdot (2)^2$

B

$1 \cdot (-3)^2 x^2 + 2 \cdot (-3)^1 \cdot (2)^1 x + 1 \cdot (2)^2$

C

$1 \cdot (-3)^2 x^2 + 3 \cdot (-3)^1 \cdot (2)^1 x + 3 \cdot (2)^2$

2 Use Pascal's triangle to write the partly-expanded form (leave each power un-evaluated).

$$\begin{array}{c}
 1 \\
 1 \quad 1 \\
 1 \quad 2 \quad 1 \\
 1 \quad 3 \quad 3 \quad 1 \\
 1 \quad 4 \quad 6 \quad 4 \quad 1 \\
 1 \quad 5 \quad 10 \quad 10 \quad 5 \quad 1 \\
 (2p + 3)^3
 \end{array}$$

A $1 \cdot (2)^3 p^3 + 2 \cdot (2)^2 \cdot (3)^1 p^2 + 1 \cdot (2)^1 \cdot (3)^2 p + 0 \cdot (3)^3$

B

$1 \cdot (2)^3 p^3 + 3 \cdot (2)^2 \cdot (3)^1 p^2 + 3 \cdot (2)^1 \cdot (3)^2 p + 1 \cdot (3)^3$

C

$1 \cdot (2)^3 p^3 + 4 \cdot (2)^2 \cdot (3)^1 p^2 + 6 \cdot (2)^1 \cdot (3)^2 p + 4 \cdot (3)^3$

3 Use Pascal's triangle to write the partly-expanded form (leave each power un-evaluated).

$$\begin{array}{c}
 1 \\
 1 \quad 1 \\
 1 \quad 2 \quad 1 \\
 1 \quad 3 \quad 3 \quad 1 \\
 1 \quad 4 \quad 6 \quad 4 \quad 1 \\
 1 \quad 5 \quad 10 \quad 10 \quad 5 \quad 1 \\
 (2r - 3)^2
 \end{array}$$

A $1 \cdot (2)^2 r^2 + 3 \cdot (2)^1 \cdot (-3)^1 r + 3 \cdot (-3)^2$

B

$1 \cdot (2)^2 r^2 + 2 \cdot (2)^1 \cdot (-3)^1 r + 1 \cdot (-3)^2$

C

$1 \cdot (2)^2 r^2 + 1 \cdot (2)^1 \cdot (-3)^1 r + 0 \cdot (-3)^2$

4 Use Pascal's triangle to write the partly-expanded form (leave each power un-evaluated).

$$\begin{array}{c}
 1 \\
 1 \quad 1 \\
 1 \quad 2 \quad 1 \\
 1 \quad 3 \quad 3 \quad 1 \\
 1 \quad 4 \quad 6 \quad 4 \quad 1 \\
 1 \quad 5 \quad 10 \quad 10 \quad 5 \quad 1 \\
 (3r - 3)^2
 \end{array}$$

A $1 \cdot (3)^2 r^2 + 1 \cdot (3)^1 \cdot (-3)^1 r + 0 \cdot (-3)^2$

B

$1 \cdot (3)^2 r^2 + 3 \cdot (3)^1 \cdot (-3)^1 r + 3 \cdot (-3)^2$

C

$1 \cdot (3)^2 r^2 + 2 \cdot (3)^1 \cdot (-3)^1 r + 1 \cdot (-3)^2$

5 Use Pascal's triangle to write the partly-expanded form (leave each power un-evaluated).

$$\begin{array}{c}
 1 \\
 1 \quad 1 \\
 1 \quad 2 \quad 1 \\
 1 \quad 3 \quad 3 \quad 1 \\
 1 \quad 4 \quad 6 \quad 4 \quad 1 \\
 1 \quad 5 \quad 10 \quad 10 \quad 5 \quad 1 \\
 (-2m - 3)^3
 \end{array}$$

A $1 \cdot (-2)^3 m^3 + 3 \cdot (-2)^2 \cdot (-3)^1 m^2 + 3 \cdot (-2)^1 \cdot (-3)^2 m + 1 \cdot (-3)^3$

B

$1 \cdot (-2)^3 m^3 + 2 \cdot (-2)^2 \cdot (-3)^1 m^2 + 1 \cdot (-2)^1 \cdot (-3)^2 m + 0 \cdot (-3)^3$

C

$1 \cdot (-2)^3 m^3 + 4 \cdot (-2)^2 \cdot (-3)^1 m^2 + 6 \cdot (-2)^1 \cdot (-3)^2 m + 4 \cdot (-3)^3$

6 Use Pascal's triangle to write the partly-expanded form (leave each power un-evaluated).

$$\begin{array}{c}
 1 \\
 1 \quad 1 \\
 1 \quad 2 \quad 1 \\
 1 \quad 3 \quad 3 \quad 1 \\
 1 \quad 4 \quad 6 \quad 4 \quad 1 \\
 1 \quad 5 \quad 10 \quad 10 \quad 5 \quad 1 \\
 (2n - 2)^3
 \end{array}$$

A $1 \cdot (2)^3 n^3 + 4 \cdot (2)^2 \cdot (-2)^1 n^2 + 6 \cdot (2)^1 \cdot (-2)^2 n + 4 \cdot (-2)^3$

B

$1 \cdot (2)^3 n^3 + 2 \cdot (2)^2 \cdot (-2)^1 n^2 + 1 \cdot (2)^1 \cdot (-2)^2 n + 0 \cdot (-2)^3$

C

$1 \cdot (2)^3 n^3 + 3 \cdot (2)^2 \cdot (-2)^1 n^2 + 3 \cdot (2)^1 \cdot (-2)^2 n + 1 \cdot (-2)^3$

7 Use Pascal's triangle to write the partly-expanded form (leave each power un-evaluated).

$$\begin{array}{c}
 1 \\
 1 \quad 1 \\
 1 \quad 2 \quad 1 \\
 1 \quad 3 \quad 3 \quad 1 \\
 1 \quad 4 \quad 6 \quad 4 \quad 1 \\
 1 \quad 5 \quad 10 \quad 10 \quad 5 \quad 1 \\
 (-3p + 3)^3
 \end{array}$$

A $1 \cdot (-3)^3 p^3 + 3 \cdot (-3)^2 \cdot (3)^1 p^2 + 3 \cdot (-3)^1 \cdot (3)^2 p + 1 \cdot (3)^3$

B

$1 \cdot (-3)^3 p^3 + 4 \cdot (-3)^2 \cdot (3)^1 p^2 + 6 \cdot (-3)^1 \cdot (3)^2 p + 4 \cdot (3)^3$

C

$1 \cdot (-3)^3 p^3 + 2 \cdot (-3)^2 \cdot (3)^1 p^2 + 1 \cdot (-3)^1 \cdot (3)^2 p + 0 \cdot (3)^3$

8 Use Pascal's triangle to write the partly-expanded form (leave each power un-evaluated).

$$\begin{array}{c}
 1 \\
 1 \quad 1 \\
 1 \quad 2 \quad 1 \\
 1 \quad 3 \quad 3 \quad 1 \\
 1 \quad 4 \quad 6 \quad 4 \quad 1 \\
 1 \quad 5 \quad 10 \quad 10 \quad 5 \quad 1 \\
 (-2y + 3)^3
 \end{array}$$

A $1 \cdot (-2)^3 y^3 + 3 \cdot (-2)^2 \cdot (3)^1 y^2 + 3 \cdot (-2)^1 \cdot (3)^2 y + 1 \cdot (3)^3$

B

$1 \cdot (-2)^3 y^3 + 2 \cdot (-2)^2 \cdot (3)^1 y^2 + 1 \cdot (-2)^1 \cdot (3)^2 y + 0 \cdot (3)^3$

C

$1 \cdot (-2)^3 y^3 + 4 \cdot (-2)^2 \cdot (3)^1 y^2 + 6 \cdot (-2)^1 \cdot (3)^2 y + 4 \cdot (3)^3$