

1.11 Binomial Theorem

Name: _____

Hour: _____ Date: _____

Expand the binomials on #1 - 4.

$$1 \quad 5 \quad 10 \quad 10 \quad 5 \quad 1$$

1. $(x - 2k)^5$

$$x^5 + 5 \cdot x^4 \cdot (-2k)^1 + 10 x^3 \cdot (-2k)^2 + 10 x^2 \cdot (-2k)^3 + 5 x \cdot (-2k)^4 + (-2k)^5$$

$$\left[x^5 - 10x^4k + 40x^3k^2 - 80x^2k^3 + 80xk^4 - 32k^5 \right]$$

$$1 \quad 4 \quad 6 \quad 4 \quad 1$$

2. $(3b + m)^4$

$$(3b)^4 + 4(3b)^3(m) + 6(3b)^2(m)^2 + 4(3b)(m)^3 + m^4$$

$$\left[81b^4 + 108b^3m + 54b^2m^2 + 12bm^3 + m^4 \right]$$

$$1 \quad 3 \quad 3 \quad 1$$

3. $(5p - 2x)^3$

$$(5p)^3 + 3(5p)^2(-2x) + 3(5p)(-2x)^2 + (-2x)^3$$

$$\left[125p^3 - 150p^2x + 60px^2 - 8x^3 \right]$$

$$1 \quad 6 \quad 15 \quad 20 \quad 15 \quad 6 \quad 1$$

4. $(y + 4a)^6$

$$y^6 + 6y^5(4a) + 15(y^4)(4a)^2 + 20y^3(4a)^3 + 15y^2(4a)^4 + 6y(4a)^5 + (4a)^6$$

$$\left[y^6 + 24y^5a + 240y^4a^2 + 1280y^3a^3 + 3840y^2a^4 + 6144ya^5 + 4096a^6 \right]$$

5. What is the coefficient of the term containing b^4 when the expression $(b + 6)^7$ is expanded?

$$35(b^4)(6)^3$$

$$[7560]b^4$$

6. What is the coefficient of the term containing g^6 when the expression $(2g - 1)^9$ is expanded?

$$24(2g)^6(-1)^3$$

$$-1792$$