

A2.A.36: Binomial Expansions 2: Apply the binomial theorem to expand a binomial and determine a specific term of a binomial expansion

- 1 What is the fourth term in the expansion of $(y - 1)^7$?
- 2 What is the fourth term in the binomial expansion $(x - 2)^8$?
- 3 What is the fourth term in the expansion of $(3x - 2)^5$?
- 4 What is the *last* term in the expansion of $(x + 2y)^5$?
- 5 What is the third term in the expansion of $(2x - 3)^5$?
- 6 What is the third term in the expansion of $(3x - 2)^5$?
- 7 Which expression represents the third term in the expansion of $(2x^4 - y)^3$?
- 8 The ninth term of the expansion of $(3x + 2y)^{15}$ is
- 9 What is the middle term in the expansion of $(x + y)^4$?
- 10 What is the middle term in the expansion of $\left(\frac{x}{2} - 2y\right)^6$?
- 11 What is the third term in the expansion of $(\cos x + 3)^5$?
- 12 What is the coefficient of the fifth term in the expansion of $(x + 1)^8$?
- 13 What is the coefficient of the fourth term in the expansion of $(a - 4b)^9$?
- 14 In the binomial expansion of $(x + y)^8$, what is the coefficient of the term containing x^3y^5 ?

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Answer Section

1 ANS:

$$-35y^4$$

$${}_7C_3(y)^{7-3}(-1)^3 = -35y^4$$

REF: 060619b

2 ANS:

$$-448x^5$$

$${}_8C_3 \cdot x^{8-3} \cdot (-2)^3 = 56x^5 \cdot (-8) = -448x^5$$

REF: 011308a2

3 ANS:

$$-720x^2$$

$${}_5C_3(3x)^2(-2)^3 = 10 \cdot 9x^2 \cdot -8 = -720x^2$$

REF: fall0919a2

4 ANS:

$$32y^5$$

$${}_5C_5(x)^{5-5}(2y)^5 = 32y^5$$

REF: 080208b

5 ANS:

$$720x^3$$

$${}_5C_2(2x)^{5-2}(-3)^2 = 720x^3$$

REF: 011519a2

6 ANS:

$$1,080x^3$$

$${}_5C_2(3x)^{5-2}(-2)^2 = 1,080x^3$$

REF: 080915b

7 ANS:

$$6x^4y^2$$

$${}_3C_2(2x^4)^1(-y)^2 = 6x^4y^2$$

REF: 011215a2

8 ANS:

$${}_{15}C_8(3x)^7(2y)^8$$

REF: 081525a2

9 ANS:

$$6x^2y^2$$

$${}_4C_2(x)^{4-2}(y)^2 = 6x^2y^2$$

REF: 080412b

10 ANS:

$$-20x^3y^3$$

$${}_6C_3\left(\frac{x}{2}\right)^3(-2y)^3 = 20 \cdot \frac{x^3}{8} \cdot -8y^3 = -20x^3y^3$$

REF: 061215a2

11 ANS:

$$90\cos^3x$$

$${}_5C_2(\cos x)^{5-2}(3)^2 = 90\cos^3x$$

REF: 060517b

12 ANS:

$$70$$

$${}_nC_{r-1} = {}_nC_{5-1} = 70$$

REF: 010820b

13 ANS:

$$-5,376$$

$${}_9C_3a^6(-4b)^3 = -5376a^6b^3$$

REF: 061126a2

14 ANS:

$$56$$

REF: 011016b