

A.APR.C.5: Binomial Expansions 1

- 1 What is the fourth term in the expansion of $(y - 1)^7$?
 - 1) $35y^4$
 - 2) $35y^3$
 - 3) $-35y^4$
 - 4) $-35y^3$

- 2 What is the fourth term in the binomial expansion $(x - 2)^8$?
 - 1) $448x^5$
 - 2) $448x^4$
 - 3) $-448x^5$
 - 4) $-448x^4$

- 3 What is the fourth term in the expansion of $(3x - 2)^5$?
 - 1) $-720x^2$
 - 2) $-240x$
 - 3) $720x^2$
 - 4) $1,080x^3$

- 4 What is the fourth term in the expansion of $(2x - 1)^6$?
 - 1) $-160x^3$
 - 2) $-40x^3$
 - 3) $16x^4$
 - 4) $240x^4$

- 5 What is the *last* term in the expansion of $(x + 2y)^5$?
 - 1) y^5
 - 2) $2y^5$
 - 3) $10y^5$
 - 4) $32y^5$

- 6 What is the third term in the expansion of $(2x - 3)^5$?
 - 1) $720x^3$
 - 2) $180x^3$
 - 3) $-540x^2$
 - 4) $-1080x^2$

- 7 The fourth term of the expansion of $(2x - 3)^5$ is
 - 1) $1080x^2$
 - 2) $-540x^2$
 - 3) $720x^3$
 - 4) $810x$

- 8 What is the third term in the expansion of $(3x - 2)^5$?
 - 1) $1,080x^2$
 - 2) $270x^3$
 - 3) $540x^3$
 - 4) $1,080x^3$

- 9 Which expression represents the third term in the expansion of $(2x^4 - y)^3$?
- 1) $-y^3$
 - 2) $-6x^4y^2$
 - 3) $6x^4y^2$
 - 4) $2x^4y^2$
- 10 The ninth term of the expansion of $(3x + 2y)^{15}$ is
- 1) ${}_{15}C_9(3x)^6(2y)^9$
 - 2) ${}_{15}C_9(3x)^9(2y)^6$
 - 3) ${}_{15}C_8(3x)^7(2y)^8$
 - 4) ${}_{15}C_8(3x)^8(2y)^7$
- 11 What is the middle term in the expansion of $(x + y)^4$?
- 1) x^2y^2
 - 2) $2x^2y^2$
 - 3) $6x^2y^2$
 - 4) $4x^2y^2$
- 12 What is the middle term in the expansion of $\left(\frac{x}{2} - 2y\right)^6$?
- 1) $20x^3y^3$
 - 2) $-\frac{15}{4}x^4y^2$
 - 3) $-20x^3y^3$
 - 4) $\frac{15}{4}x^4y^2$
- 13 What is the third term in the expansion of $(\cos x + 3)^5$?
- 1) $90\cos^2x$
 - 2) $270\cos^2x$
 - 3) $60\cos^3x$
 - 4) $90\cos^3x$
- 14 What is the coefficient of the fifth term in the expansion of $(x + 1)^8$?
- 1) 8
 - 2) 28
 - 3) 56
 - 4) 70
- 15 What is the coefficient of the fourth term in the expansion of $(a - 4b)^9$?
- 1) $-5,376$
 - 2) -336
 - 3) 336
 - 4) 5,376
- 16 In the binomial expansion of $(x + y)^8$, what is the coefficient of the term containing x^3y^5 ?
- 1) 15
 - 2) 28
 - 3) 56
 - 4) 70

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Answer Section

1 ANS: 3

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

REF: 060619b

2 ANS: 3

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

REF: 011308a2

3 ANS: 1

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

REF: fall0919a2

4 ANS: 1

$${}_{56}C_3(2x)^3(-1)^3 = 20 \cdot 8x^3 \cdot -1 = -160x^3$$

REF: 061622a2

5 ANS: 4

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

REF: 080208b

6 ANS: 1

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

REF: 011519a2

7 ANS: 1

$${}_5C_3(2x)^{5-3}(-3)^3 = -1040x^2$$

REF: 081625a2

8 ANS: 4

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

REF: 080915b

9 ANS: 3

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

REF: 011215a2

10 ANS: 3

REF: 081525a2

11 ANS: 3

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

REF: 080412b

12 ANS: 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

13 ANS: 4

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

REF: 060517b

14 ANS: 4

$${}_x C_{r-1} = {}_8 C_{5-1} = 70$$

REF: 010820b

15 ANS: 1

$${}_9C_3 a^6 (-4b)^3 = -5376a^6b^3$$

REF: 061126a2

16 ANS: 3

REF: 011016b