

解答 ※右辺の展開はしていません。

1. 微分 2 $(f^n)' = n \cdot f' \cdot f^{n-1}$ まで

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|--------------------------------|---------------------------------|
| (1) $4(2x - 4)$ | |
| (2) $12x(3x^2 - 4)$ | |
| (3) $2(4x - 10)(2x^2 - 10x)$ | |
| (4) $4(2x - 9)$ | (5) $4x(x^2 + 10)$ |
| (6) $2(6x - 8)(3x^2 - 8x)$ | (7) $2(3x^2 - 12x)(x^3 - 6x^2)$ |
| (8) $3(x + 1)^2$ | |
| (9) $12(3x - 6)^3$ | (10) $108x^2(4x^3 + 6)^8$ |
| (11) $12x^2(x^3 - 9)^3$ | (12) $9x^2(x^3 - 9)^2$ |
| (13) $4(3x^2 - 7)(x^3 - 7x)^3$ | (14) $3(x - 4)^2$ |
| (15) $12x^2(2x^3 + 398)$ | (16) $40x(x^2 + 2)^{19}$ |
| (17) $-16x^3(-2x^4 - 114)$ | (18) $-60x^4(-3x^5 - 333)^3$ |

3. 微分 2 $(f^n)' = n \cdot f' \cdot f^{n-1}$ まで

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|------------------------------------|---------------------------------|
| (1) $6(3x - 6)$ | |
| (2) $4x(x^2 - 5)$ | |
| (3) $2(6x + 4)(3x^2 + 4x)$ | |
| (4) $6(3x + 6)$ | (5) $12x^2(2x^3 + 3)$ |
| (6) $12x(3x^2 + 8)$ | (7) $2(6x^2 - 8x)(2x^3 - 4x^2)$ |
| (8) $6(2x - 7)^2$ | |
| (9) $8(2x - 5)^3$ | (10) $-9(-x - 8)^8$ |
| (11) $4(3x^2 - 1)(x^3 - x)^3$ | (12) $24x^2(2x^3 + 9)^3$ |
| (13) $9(3x + 4)^2$ | (14) $18x^2(2x^3 + 7)^2$ |
| (15) $-800x^{99}(-2x^{100} - 6)^3$ | (16) $12x^2(x^3 + 1)^3$ |
| (17) $4x(x^2 + 5)$ | (18) $80x(2x^2 + 3)^{19}$ |

5. 微分 2 $(f^n)' = n \cdot f' \cdot f^{n-1}$ まで

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|--------------------------------|--------------------------------|
| (1) $4(2x + 6)$ | |
| (2) $12x(3x^2 + 7)$ | |
| (3) $2(2x + 8)(x^2 + 8x)$ | |
| (4) $8x(2x^2 + 8)$ | (5) $12x^2(2x^3 - 3)$ |
| (6) $2(9x^2 + 2x)(3x^3 + x^2)$ | (7) $2(4x + 2)(2x^2 + 2x)$ |
| (8) $9(3x - 8)^2$ | |
| (9) $8(2x - 6)^3$ | (10) $27(3x - 4)^8$ |
| (11) $24x^2(2x^3 + 2)^3$ | (12) $6(2x + 2)^2$ |
| (13) $24x(3x^2 - 1)^3$ | (14) $4(9x^2 - 1)(3x^3 - x)^3$ |
| (15) $-12x(-2x^2 - 8)^2$ | (16) $81x^2(3x^3 - 400)^8$ |
| (17) $75x^4(3x^5 - 9)^4$ | (18) $21x^2(x^3 + 9)^6$ |

2. 微分 2 $(f^n)' = n \cdot f' \cdot f^{n-1}$ まで

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|----------------------------|---------------------------------|
| (1) $2(x + 2)$ | |
| (2) $8x(2x^2 + 4)$ | |
| (3) $2(4x - 5)(2x^2 - 5x)$ | |
| (4) $4x(x^2 - 4)$ | (5) $2(3x^2 - 12x)(x^3 - 6x^2)$ |
| (6) $2(2x + 8)(x^2 + 8x)$ | (7) $6x^2(x^3 + 5)$ |
| (8) $9(3x - 4)^2$ | |
| (9) $4(x - 1)^3$ | (10) $480x^7(3x^8 - 7)^{19}$ |
| (11) $36x^2(3x^3 - 3)^3$ | (12) $8x(x^2 - 3)^3$ |
| (13) $12x(2x^2 + 10)^2$ | (14) $4(x - 8)^3$ |
| (15) $10(x - 7)^9$ | (16) $56x^3(2x^4 - 1)^6$ |
| (17) $-18(-2x + 365)^8$ | (18) $5(x + 10)^4$ |

4. 微分 2 $(f^n)' = n \cdot f' \cdot f^{n-1}$ まで

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|-----------------------------------|----------------------------------|
| (1) $6(3x + 8)$ | |
| (2) $4x(x^2 + 7)$ | |
| (3) $2(4x + 4)(2x^2 + 4x)$ | |
| (4) $2(2x - 9)(x^2 - 9x)$ | (5) $12x(3x^2 + 3)$ |
| (6) $2(x + 3)$ | (7) $2(9x^2 + 14x)(3x^3 + 7x^2)$ |
| (8) $6(2x - 3)^2$ | |
| (9) $8(2x + 10)^3$ | (10) $162x^8(3x^9 + 7)^5$ |
| (11) $12x^2(x^3 + 1)^3$ | (12) $18x^2(2x^3 - 8)^2$ |
| (13) $3(4x^3 - 4x)(x^4 - 2x^2)^2$ | (14) $8x(x^2 - 7)^3$ |
| (15) $100x^9(x^{10} + 4)^9$ | (16) $180x^8(4x^9 + 412)^4$ |
| (17) $-60x^3(-3x^4 + 8)^4$ | (18) $400x^{99}(2x^{100} - 8)$ |

6. 微分 2 $(f^n)' = n \cdot f' \cdot f^{n-1}$ まで

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|----------------------------------|------------------------------------|
| (1) $6(3x + 9)$ | |
| (2) $4x(x^2 - 10)$ | |
| (3) $2(2x + 10)(x^2 + 10x)$ | |
| (4) $12x(3x^2 - 8)$ | (5) $2(6x + 9)(3x^2 + 9x)$ |
| (6) $2(9x^2 + 14x)(3x^3 + 7x^2)$ | (7) $6(3x + 5)$ |
| (8) $9(3x - 3)^2$ | |
| (9) $4(x - 5)^3$ | (10) $140x^6(2x^7 + 3)^9$ |
| (11) $9x^2(x^3 + 3)^2$ | (12) $24x^2(2x^3 + 2)^3$ |
| (13) $6x(x^2 - 3)^2$ | (14) $3(4x^3 - 16x)(x^4 - 8x^2)^2$ |
| (15) $-600x^5(-x^6 + 936)^{99}$ | (16) $12x(3x^2 - 6)$ |
| (17) $-12x^2(-2x^3 - 8)$ | (18) $14(2x + 3)^6$ |