

$$\textcircled{1} \quad \frac{1}{3} \left((-x-5)^{1/2} - 5 \right)^{-2/3} \left(\frac{1}{2} (-x-5)^{-1/2} (-1) \right)$$

$$\textcircled{2} \quad \frac{1}{3} \left((x+5)^{1/2} + 2 \right)^{-2/3} \left(\frac{1}{2} (x+5)^{-1/2} \right)$$

$$\textcircled{3} \quad (-x^3+3)^{1/3} \left(4(-3x^2+4)^3 (-6x) \right) + (-3x^2+4)^4 \left(\frac{1}{3} (-x^3+3)^{-2/3} (-3x^2) \right)$$

$$\textcircled{4} \quad (-3x^4-5)^3 \left(-2(5x^3-4)^{-3} (15x^2) \right) + (5x^3-4)^{-2} \left(3(-3x^4-5)^2 (-12x^3) \right)$$

$$\textcircled{5} \quad (5x^2-4)^3 \left(\frac{1}{2} (-x^5+3)^{-1/2} (-5x^4) \right) + (-x^5+3)^{1/2} \left(3(5x^2-4)^2 (10x) \right)$$

$$\textcircled{6} \quad (-x^2-3)^{-5} \left(\frac{1}{2} (-4x^3+1)^{-1/2} (-12x^2) \right) + (-4x^3+1)^{1/2} \left(-5(-x^2-3)^{-6} (-2x) \right)$$

$$\textcircled{7} \quad (4x^5+1)^{-5} \left(3(x^2-3)^2 (2x) \right) + (x^2-3)^3 \left(-5(4x^5+1)^{-6} (20x^4) \right)$$

$$\textcircled{8} \quad (5x^4+3)^{-4} \left(\frac{1}{3} (4x-5)^{-2/3} (4) \right) + (4x-5)^{1/3} \left(-4(5x^4+3)^{-5} (20x^3) \right)$$

$$\textcircled{9} \quad \left(\frac{1}{3} (2x^2+5)^{-2/3} (4x) \right)$$

$$\textcircled{9} \quad (-2x^2+5)^{1/3} \left(-\frac{1}{2} (3x-5)^{-3/2} (9x^2) \right) + (3x-5)^{-1/2} \left(\frac{1}{3} (-2x^2+5)^{-2/3} (-4x) \right)$$

$$(10) -3(15x^2+4)^{\frac{1}{2}+3} \left(\frac{1}{2}(15x^2+4)^{-\frac{1}{2}}(10x) \right)$$

$$(11) \frac{dy}{dx} = \frac{5+8xy^3}{-2-12x^2y^2}$$

$$(12) \frac{dy}{dx} = \frac{-9x^2y^3-15x^2-2y^3}{6xy^2+9x^3y^2}$$

$$(13) \frac{12x^2+3x^2y+3x^2y^2}{-2x^3-x^3}$$

$$(14) \frac{-8x-2y^2-6x^2y^3}{4xy+6x^3y^2}$$

$$(15) \frac{2x+4y^2+4xy^2}{-8xy-4x^2y}$$

$$(16) \frac{-12x^2-9x^2y^2-9y^2}{6x^3y}$$

$$(17) \frac{-6x-6x^2y^2}{4+4x^3y}$$

$$(18) \frac{-3-3y^3}{9xy^2+2}$$

$$(19) \frac{9x^2+4xy+12x^2y^2}{-2x^2-8x^3y}$$

$$(20) \frac{2x+6x^2y^2}{-4x^2y-9y^2}$$

$$(21) 5x^3(2(x^5-5)(5x^4)) + (x^5-5)^2(5x^3 \cdot 3x^2 \cdot \ln(5))$$

$$(22) 3(4x^2-3)^5 \cdot 5(4x^2-3)^4(8x)$$

23) Omit

25) Omit

~~(24) Omit~~

$$(24) (2x^4 + 2)(5^{2x^3}, 6x^2, \ln(5)) + 5^{2x^3}(2x^4, 4x^3, \ln(2))$$

$$(26) 3cx^{3c-1} + \frac{4}{3}cx^{2c-1} + 12x^2 \quad (27) 10x^{-6}$$

$$(28) \text{omit} \quad (29) \text{omit} \quad (30) \frac{3}{4}x^{-4}$$

$$(31) (4\sqrt[5]{x} + 4)(-5x^4) + (-x^5 + 2)\left(\frac{4}{5}x^{-4/5}\right)$$

$$(32) (5 + \frac{4}{x^3})(9x^2) + (3x^3)(-12x^{-4})$$

$$(33) (3 - \frac{2}{x^2})(-6x) + (-3x^2 + 4)(10x^{-3})$$

$$(34) (4x^2 + 2x^{3/5} - 1)(12x^3) + (3x^4 + 5)(8x + \frac{6}{5}x^{-3/5})$$

$$(35) (4 - \frac{5}{x^2})(12x^3) + (3x^4 + 1)(10x^{-3})$$

$$(36) (2 + \frac{3}{x^3})(-4x^3) + (-x^4)(-9x^{-4})$$

$$(37) 3\sqrt[3]{x}(-15x^2) + (-5x^3 + 5)(x^{-2/3})$$

$$(38) (3 + \frac{4}{x^3})(-3x^2) + (-x^3 - 4)(-12x^{-4})$$

$$(39) (-5x^{4/3} + 1)(-25x^4) + (-5x^5 + 3)\left(-\frac{20}{3}x^{1/3}\right)$$

$$(40) (3 + \frac{2}{x^5})(12x^2 - 10x) + (4x^3 + 5x^2 - 2)(3 + \frac{2}{x^5})$$

~~40~~ ~~(4x^4 + 2)(2x) - [x^2(16x^3)]~~

$$(41) \frac{(4x^4 + 2)(2x) - [x^2(16x^3)]}{(4x^4 + 2)^2}$$

$$(42) \frac{(3x^2 - 2)(6x^2) - [(2x^3 + 5)(6x)]}{(3x^2 - 2)^2}$$

$$(43) \frac{(5x^4 - 2)(5x^4 - 8x) - [(x^5 - 4x^2 - 5)(20x^3)]}{(5x^4 - 2)^2}$$

$$(44) \frac{-2(20x^3 + 5)}{(5x^4 + 5)^2}$$

~~45~~

$$(45) \frac{(x^2 + 5)(12x^2) - [(4x^3)(2x)]}{(x^2 + 5)^2}$$

$$(46) \frac{(3x^2 - 3)(5x^4 + 8x^3) - [(x^5 + 2x^4 + 4)(6x)]}{(3x^2 - 3)^2}$$

$$(47) \frac{(3x^2 + 5)(16x^3 + 16x^2 - 10x) - [(4x^4 + 2x^3 - 5x^2)(6x)]}{(3x^2 + 5)^2}$$

$$(48) \frac{(3x^4 - 3)(25x^4 + 4x^3) - [(5x^5 + x^4)(12x^3)]}{(3x^4 - 3)^2}$$

$$(49) \frac{(5x^4 - 5)(25x^4 - 3x^2 + 8x) - [(5x^5 - x^3 + 4x^2)(20x^3)]}{(5x^4 - 5)^2}$$

$$\frac{(5x^3+2)(5x^4-4x) - [(x^5-2x^2)(13x^2)]}{(5x^3+2)^2}$$

~~51) $\frac{4x^3 \sin(4x^5) - 20x^4 \cos(4x^5)}{4x^3 \sin(4x^5) - 20x^4 \cos(4x^5)}$~~

$$51) \cot x^3 \cdot -20x^4 \sin(4x^5) + \cos(4x^5) \cdot -3x^2 \csc^2(x^3)$$

$$52) \frac{\csc(2x^5)(2x \cos x^2) - [\sin x^2(-10x^4 \csc(2x^5) \cot(2x^5))]}{\csc^2 2x^5}$$

$$53) \frac{\sec 2x^3 \cdot 16x^3 \sec^2(4x^4) - [\tan 4x^4 (6x^2 \sec(2x^3) \tan(2x^3))]}{\sec^2(2x^3)}$$

$$54) \frac{\sin 2x^2 \cdot 9x^2 \sin(3x^3) - [\cos(3x^3) \cdot 4x \cos(2x^2)]}{\sin^2(2x^2)}$$