

①

$$\frac{12x - 2y^2 + 4}{4xy + 3 - 6y^2} = \frac{dy}{dx}$$

②

$$\frac{-15x}{1+25x^2} + 3\cot^{-1}(5x)$$

③

$$12e^{4x} \sin(2x) + 16e^{4x} \cos(2x)$$

④

$$\frac{6 - 2\ln(4x^3)}{4x^2}$$

⑭

$$\frac{dr}{dt} = \frac{7}{36\pi} \text{ cm/sec}$$

⑤

$$\frac{5}{6} \left(\frac{5}{2}x + \frac{3}{2} \right)^{-2/3}$$

⑮

$$\frac{dh}{dt} = -\frac{\sqrt{3}}{2} \text{ ft/sec}$$

⑥

$$-3 \cdot 4^{x^3} \sin(3x) + 3x^2 \cdot \ln(4) \cdot 4^{x^3} \cdot \cos(3x)$$

$$(7) \quad y+2 = -\frac{1}{24}(x+1)$$

$$(8) \quad 2$$

$$(9) \quad \frac{2e^{2x} - [(2x-3)(2e^{2x})]}{e^{4x}}$$

$$(10) \quad \frac{dy}{dx} = \frac{-3-6x^2}{-3-10y}$$

$$(11) \quad 40$$

$$(12) \quad \frac{1}{6}x^{-7/6}$$

$$(13) \quad 2\sec(2x)(4x-3)^{-1/2} + 2\sqrt{4x-3}\sec(2x)\tan(2x)$$