

# Reyes Villar Luis Ricardo

①  $y = \frac{3x^3 - 3x}{6x^2 - 4}$

$$y' = \frac{(6x^2 - 4) \cdot (9x^2 - 3) - (3x^3 - 3x)(12x)}{(6x^2 - 4)^2}$$

$$y' = \frac{(48x^4 - 36x^2 - 18x^2 + 12) - (36x^4 - 36x^2)}{(6x^2 - 4)^2}$$

$$y' = \frac{48x^4 - 36x^2 - 18x^2 + 12 - 36x^4 + 36x^2}{(6x^2 - 4)^2}$$

$$y' = \frac{12x^4 - 18x^2 + 12}{(6x^2 - 4)^2}$$

②  $y = (2x^3 + 2)(4x - 3)$

$$y' = 2x^3 + 2(4) + 4x - 3(6x^2)$$

$$y' = 8x^3 + 8 + 4x - 18x^2$$

$$y' = 8x^3 - 18x^2 + 4x + 8$$

③  $y = (4x - 6)^6$

$$y' = 6(4x - 6)^5 \cdot 4$$

$$y' = 24(4x - 6)^5$$

④  $y = \frac{5x^3}{4} + 6x^{5/2} + x + 8b^2 + 3$

$$y' = \frac{5}{4}(3x^2) + \frac{5}{2}6x^{3/2} + 1 + 2 \cdot 8b^2$$

$$y' = \frac{5}{4}(3x^2) + 15x^{3/2} + 1 + 16b$$

$$y' = \frac{15x^2}{4} + 15x^{3/2} + 16b + 1$$

⑤  $y = \sqrt{8x - e^{4x}}$

$$y' = \frac{1}{2}(8x - e^{4x})^{-1/2} (8 - e^{4x} \cdot 4)$$

$$y' = \frac{1}{2}(8x - e^{4x})^{-1/2} (8 - 4e^{4x})$$

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$$\textcircled{6} y = \frac{2x^2-1}{\sqrt{x-1}}$$

$$y = \frac{2x^2-1}{(x-1)^{1/2}}$$

$$y' = \frac{((x-1)^{1/2} \cdot 4x) - (2x^2-1) \cdot (\frac{1}{2}(x-1)^{-1/2})}{(x-1)^1}$$

$$\textcircled{7} y = e^{6x} \ln 6x^2$$

$$y' = (e^{6x} \cdot 2 \cdot \ln 6x) + \ln 6x^2 \cdot (e^{6x} \cdot 6)$$

$$y' = e^{6x} (2 \ln 6x) + \ln 6x^2 \cdot (e^{6x} \cdot 6)$$

$$\textcircled{8} y = (x-3)(2x^3-4x)^{2/3}$$

$$y' = (x-3) \left( \frac{2}{3}(2x^3-4x)^{-1/3} \cdot (6x^2-4) \right) + (2x^3-4x)^{2/3} \cdot 1$$

$$y' = (x-3) \left( \frac{2}{3}(2x^3-4x)^{-1/3} \cdot (6x^2-4) \right) + (2x^3-4x)^{2/3}$$

$$\textcircled{9} y \textcircled{10}$$

$$y = \sqrt{\frac{2x^2-8}{\sqrt{x-2}}} = \left( \frac{2x^2-8}{\sqrt{x-2}} \right)^{1/2} = \left( \frac{2x^2-8}{(x-2)^{1/2}} \right)^{1/2}$$

$$y' = \frac{1}{2} \left( \frac{2x^2-8}{(x-2)^{1/2}} \right)^{-1/2} \cdot \frac{((x-2)^{1/2} \cdot 4x) - (2x^2-8) \cdot (\frac{1}{2}(x-2)^{-1/2})}{(x-2)^1}$$