$f(t)\ \frac{a t^{9}}{18}$

$$\frac{(t^{9})'(18)-(18)'(b^{9})}{18}$$

$$\frac{9t^{8}(\cancel{18})-0}{\cancel{18}}$$

$$f(t)=9t^{8}$$

$y=\frac{x^{3}}{3}$

$$\frac{(x^{3})'(3)-(3)'(x^{3})}{3}$$

$$\frac{3x^{2}(\cancel{3})-0}{\cancel{3}}$$

$$f(y)=3x^{2}$$

$f(x)=x+3$

$$x'+3'$$

$$f(x)=1$$

$f(x)=3x-2$

$$(3x)'-2'$$

$$f(x)=3$$

$F(x) = 4x^2 - 2x + 3$

$(4x^2)' - (2x)' + (3)'$

$F(x) = 8x - 2$

$f(x) = 7x^2 - 5x$

$(7x^2)' - (5x)'$

$F(x) = 14x - 5$

$g(p) = p^4 - 3p^3 - 1$

$(p^4)' - (3p^3)' (1)$

$g(p) = 4p^3 - 9p^2$

$F(t) = -13t^2 + 14t + 1$

$(-13t^2)' + (14t) + (1)'$

$f(t) = -26t + 14$

$y = -x^8 + x^5$

$(x^8)' + (x^5)$

$y'(x) = 8x^7 + 5x^4$

$y = -8x^4 \times \ln 2$

$(-8x^4)' + (\ln 2)'$

$-32x^3 + \ln 2(2)'$

$-32x^3 + 0$

$-32x^3$

$y = -13x^3 + 14x^2 - 2x + 3$

$(-13x^3)' + (14x^2)' - (2x)' + (3)'$

$y(x) = -39x^2 + 28x - 2$

$V(r) = r^8 - 7r^6 + 3r^2 + 1$

$(r^8)' - (7r^6)' + (3r)' + (1)'$

$V'(r) = 8r^7 - 42r^5 + 6r$

$f(x) = 2(13 - x^4)$

$26 - 2x^4$

$(26)' - (2x^4)'$

$0 - 8x^3$

$f'(x) = -8x^3$

$f(v) = 5(s^4 - 3)$

$5s^4 - 15$

$(5s^4)' - (15)'$

$20s^3 - 0$ $f(x) - 20s^3$

$g(x) = \frac{13 - x^4}{3}$

$\frac{(13 - x^4)'(3) - (13 - x^4)(3)'}{3}$

$\frac{(0 - 3x^3)(3) - (13 - x^4)(0)}{3}$

$\frac{-9x^3 - 0}{3}$

$g'(x) = -3x^3$

$f(x) = \frac{5(x^4 - 6)}{2}$

$\left(\frac{5x^4 - 30}{2} \right.$

$\frac{(5x^4 - 30)'(2) - (2)'(5x^4 - 30)}{2}$

$\frac{(20x^3 - 0)(2) - 0(5x^4 - 30)}{2}$

$\frac{40x^3}{2}$

$f(x) = 20x^3$

$h(x) = 4x^4 + x^3 - \frac{9}{2}x^2 + 8x$

$(4x^4)' + (x^3)' - (\frac{9}{2}x^2)' + (8x)'$

$h(x) = 16x^3 + 3x^2 - 9x + 8$

$f(x) = -3x^2 + \frac{9}{2}x + 2$

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

$f(x) - 6x + \frac{9}{2}$

$f(x) = \frac{3x^4}{10} + \frac{7}{3}x^3$

$\left(\frac{3}{10}x^4\right)' + \left(\frac{7}{3}x^3\right)'$

$\frac{12^{6}}{10_{5}} x^3 + 7x^2$

$f(x) = \frac{6}{5}x^3 + 7x^2$ R

$f(x) = \frac{x^7}{7} + \frac{2x}{3}$

$\left(\frac{x^7}{7}\right)' + \left(\frac{2x}{3}\right)'$

$\frac{7x^6}{7} + \frac{2}{3}$

$f'(x) = x^6 + \frac{2}{3}$ R

$f(x) = x^{\frac{7}{2}}$

$f(x) = \frac{7}{2}x^{\frac{5}{2}}$ R

$f(x) = 2x$

$\left(\frac{-14}{5}\right)(2)\,x$

$f(x) = \frac{28}{5}x^{-\frac{19}{5}}$

$y = x^{\frac{3}{4}} \times 2x^{\frac{5}{3}}$

$y'(x)\ \frac{3}{4}x^{-\frac{1}{4}} + \frac{10}{3}x^{\frac{2}{3}}$

$y = 5x^3 - x^{-\frac{2}{5}}$

$15x^2 - \left(-\frac{2}{5}\right) x^{\frac{-7}{5}}$

$y(x) = 15x^2 + \frac{2}{5} x^{\frac{-7}{5}}$ R

$y = 11\sqrt{x}$

$11 (x)^{\frac{1}{2}}$

$11 \left(\frac{1}{2}\right) x^{-\frac{1}{2}}$

$y(x) \frac{11}{2\sqrt{x}} \cdot \frac{\sqrt{x}}{\sqrt{2}} = \frac{11\sqrt{x}}{2x}$ R

$y = \sqrt[3]{x^2}$

$x^{\frac{2}{3}}$

$y'(x) = \frac{2}{3} x^{-\frac{1}{3}}$

$f(r) = 6\sqrt[3]{r}$

$6 r^{\frac{1}{3}}$

$6 \left(\frac{1}{3}\right) r^{\frac{-3}{3}}$

$f(x)\ 2 r^{\frac{-2}{3}}$

$y = 4\sqrt[8]{x^2}$

$4 x^{\frac{21}{84}}$

$4 x^{\frac{1}{4}}$

$\cancel{4}\frac{1}{4} x^{\frac{-3}{4}}$

$y'(x) = x^{\frac{-3}{4}}$

$f(x) = x^{-4}$

$f'(x) = -4x^{-5}$

$f(x) = 3x^{-2}$

$f'(x) = -6x^{-3}$

$f(x) = x^{-3} + x^{-5} - 2x^{-4}$

$f'(x) = -3x^{-4} - 5x^{-6} + 8x^{-5}$

$f(x) = 100x^{-3} + 10x^{\frac{1}{2}}$

$-300x^{-4} + 5x^{-\frac{1}{2}}$

$y = \frac{1}{x}$

x^{-1}

$-x^{-2}$

$f'(x) = -\frac{1}{x^2}$

$f(x) = \frac{2}{x^3}$

$2x^{-3}$

$-6x^{-4}$

$f'(x) = -\frac{6}{x^4}$

$y = \frac{8}{x^5}$

$8 - x^{-5}$

$-5(8)x^{-6}$

$y'(x) -40x^{-6}$

$y = \frac{1}{4x^5}$

$\frac{1}{4}x^{-5}$

$y(x) \frac{-5}{4} x^{-6}$

$g(x) = \frac{4}{3x^3}$

$\frac{4}{3}x^{-3}$

$-\cancel{3}\frac{4}{\cancel{3}} x^{-4}$

$g'(x) = -4x^{-4}$

$y = \frac{31}{2x^6}$

$\frac{3}{2}x^{-6}$

$(-6)^3\left(\frac{3}{2}\right)x^{-7}$

$f(x) = -9x^{-7}$

$f(t) = \frac{1}{2t}$

$\frac{1}{2}t^{-1}$

$-1\left(\frac{1}{2}\right)t^{-2}$

$f'(t) = -\frac{1}{2}t^{-2} = -\frac{1}{2t^2}$

$g(x) = \frac{\ }{9x}$

$\frac{7}{9} x^{-1}$

$-1\left(\frac{7}{9}\right) x^{-2}$

$g'(x) = \frac{-7}{9x^2}$

$f(x) = \frac{x}{7} + \frac{7}{a}$

$\left(\frac{1}{7}x\right)' + (7x^{-1})'$

$\frac{1}{7} x^{0} + 7(-1)(x^{-2})$

$f'(x) = \frac{1}{7} + \frac{7}{x^2}$

$h(x) = \frac{x^2}{2} - \frac{2}{x^2}$

$\left(\frac{1}{2}x^2\right)' - (2x^2)$

$\frac{1}{2} \cdot 2x - 2(2)x$

$x - 4x$

$h'(x) - 3x$

$f(x) = -9x^{1/3} + 5x^{-\frac{2}{3}}$

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

$f(x) = -3x^{-\frac{2}{3}} - \frac{10}{3} x^{-\frac{5}{3}}$

IDEAL

$f(x) = 3\ z^{\frac{1}{4}} - 12^{2} - 8z^{-\frac{3}{4}}$

$3z^{\frac{1}{4}} - 144 - 8z^{-\frac{3}{4}}$

$(3z^{\frac{1}{4}})' - (144)' - (8z^{-\frac{3}{4}})'$

$3 \cdot \frac{1}{4} z^{-\frac{3}{4}} - 0 - 8^{2}\left(\frac{-3}{\cancel{4}}\right)$

$F(x) = \frac{3}{4z^{\frac{3}{4}}} + \frac{6}{z^{\frac{7}{4}}}$

$g(x) = \frac{1}{\sqrt[5]{x}}$

$(x^{\frac{1}{5}})'$

$g'(x) = \frac{1}{5} x^{\frac{-4}{5}}$

$f(x) = \frac{3}{\sqrt[4]{x^3}}$

$3x^{-\frac{3}{4}}$

$\left(\frac{-3}{4}\right) 3x^{-\frac{7}{4}}$

$f'(x) = \frac{-9}{4\sqrt[4]{x^7}}$

$y \frac{2}{\sqrt{(x)}}$

$2x^{-\frac{1}{2}}$

$\left(-\frac{1}{\cancel{2}}\right) \cdot \cancel{2} \left(x^{-\frac{3}{2}}\right)$

$y'(x) - \frac{1}{\sqrt[3]{x^2}}$

$y = \frac{1}{2\sqrt{x}}$

$\frac{1}{2}x^{-\frac{1}{2}}$

$\frac{1}{2}\left(-\frac{1}{2}\right)x^{-\frac{3}{2}}$

$-\frac{1}{4}x^{-\frac{3}{2}}$

$y'(x) = \frac{-1}{4\sqrt[3]{x^2}}$ R//

$y = x^2\sqrt{x}$

$x^2 x^{\frac{1}{2}}$

$x^{2+\frac{1}{2}} = x^{\frac{5}{2}}$

$\frac{5}{2}x^{\frac{3}{2}}$

$y(x) = \frac{5\sqrt[3]{x^2}}{2}$ R//

$f(x) = x^3(3x^2)$

$(3x^5)$

$f(x) = 15x^4$ R//

$f(x) = x(3x^2 - 10x + 7)$

$3x^3 - 10x^2 + 7x$

$(3x^3)' - (10x^2)' + (7x)'$

$f(x) = 9x^2 - 20x + 7$

$f(x) = x^3(3x6 - 5x^2 + 4)$

$3x^9 - 5x^5 + 4x^3$

$(3x^9)' - (5x^5)' + (4x^3)'$

$f'(x) = 27x^8 - 25x^4 + 12x^2$

$f(x) = x^3(3x)^2$

$(x^3)'(3x)^2 + (x^3)((3x)^2)'$

$(3x^2)(9x^2) + (x^3)(6x)(3)$

$27x^4 + 18x^4$

$f(x) = 45x^4$

$f(x) = \sqrt{x}(5 - 6x + 3\sqrt[4]{x})$

$(x^{\frac{1}{2}})'(5 - 6x + 3x^{\frac{1}{4}}) + (x^{\frac{1}{2}})(5 - 6x + 3x^{\frac{1}{4}})'$

$\frac{1}{2}x^{-\frac{1}{2}}(5 - 6x + 3x^{\frac{1}{4}}) + (x^{\frac{1}{2}})(0 - 6 + 3(\frac{1}{4})x^{-\frac{3}{4}})$

$\frac{5}{2\sqrt{x}} - \frac{6\sqrt{x}}{\cancel{2}} + \frac{3x^{-\frac{1}{4}}}{2} = 6\sqrt{x} + \frac{3}{4}x^{\frac{1}{4}}$

$f(x) = \frac{5\sqrt{x}}{2x} - 9\sqrt{x} + \frac{9}{4\sqrt{x}}$

$m(x) = x^{-\frac{2}{3}}(x + 5)$

$x^{\frac{1}{3}} + 5x^{-\frac{2}{3}}$

$(x^{\frac{1}{3}})' + (5x^{-\frac{2}{3}})'$

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

$m'(x) = \frac{x^{-\frac{2}{3}}}{3} - \frac{10}{3}x^{-\frac{5}{3}}$

$f(x) = x^{\frac{3}{5}}\,(x^2+7x+11)$

$x^{\frac{13}{5}} + 7x^{\frac{8}{3}} + 11\,x^{\frac{3}{5}}$

$\left(x^{\frac{13}{5}}\right) + \left(7\,x^{\frac{8}{3}}\right)' + \left(11\,x^{\frac{3}{5}}\right)'$

$\frac{13}{5}\,x^{\frac{8}{5}} + 7\left(\frac{8}{5}\right)x^{\frac{3}{5}} + 11\left(\frac{3}{5}\right)\,\cancel{x}^{-\frac{2}{5}}$

$f(x) = \frac{13}{5}\,x^{\frac{8}{5}} + \frac{56}{5}\,x^{\frac{3}{5}} + \frac{33}{5}\,x^{-\frac{2}{5}}$

$f(q) = \frac{4q^3+7q-4}{q}$

$\frac{4q^3}{q} + \frac{7q}{q} - \frac{4}{5}$

$4q^2 + 7 - 4q^{-1}$

$(4q^2)' + (7)' - (4q^{-1})'$

$8q + 0 + 4q^{-2}$

$f(q) = 8q + \frac{4}{q^2}$

$f(w) = \frac{w-5}{w^5}$

$\frac{(w-5)'\,w^5 - (w^5)'(w-5)}{(w^5)^2}$

$\frac{(1)(w^5) - (5w^4)(w-5)}{(w^5)^2}$

$\frac{w^5 - 5w^5 + 25w^4}{w^{10}}$

$\frac{-4w^5 + 25w^4}{w^{10}}$ $\qquad \frac{w^4(-4w+25)}{w^{10}}$ $\qquad f(x)\,\frac{-4w+25}{w^6}$

$f(x) = (x+1)(x+3)$

$(x+1)'(x+3) + (x+3)'(x+1)$

$'(x+3) + (1)\ (x+1)$

$x+3+x+1$

$f(x) = 2x+4$

$f(x)\ x^2(x-2)\ (x+4)$

$(x^3-2x^2)\ (x+4)$

$(x^3-2x^2)\ (x+4)$

$(x^3\ 2x^2)'\ (x+4) + (x^3-2x^2)\ (x+4)'$

$(3x^2-4x)\ (x+4) + (x^3-2x^2)\ (1)$

$3x^3+12x^2-4x^2-16x+x^3-2x^2$

$f'(x) = 4x^3+6x^2-16x$

$f(x) = \dfrac{x^2+x^3}{x^2}$

$\dfrac{(x^2+x^3)'(x^2) - (x^2+x^3)\ (x^2)'}{(x^2)^2}$

$\dfrac{(2x+3x^2)\ (x^2) - (x^2+x^3)\ (2x)}{x4}$

$\dfrac{2x^3+3x^4-2x^3+2x^4}{x4}$

$\dfrac{\cancel{x4}}{x^4}$

$f(x) = 1$

$$f(x) = \frac{7x^3 + x}{12\sqrt{x}}$$

$$\frac{(7x^3+x)'(12\sqrt{x}) - (7x^3+x)(12\sqrt{x})'}{(12\sqrt{x})^2}$$

$$\frac{(21x^2+1)(12\sqrt{x}) - (7x^3+x)(\cancel{12}^{6}(\tfrac{1}{2})x^{-\frac{1}{2}})}{144x}$$

$$\frac{252x^{\frac{5}{2}} + 12\sqrt{x} - 42x^{+\frac{5}{2}} - 6x^{\frac{1}{2}}}{144}$$

$$\frac{\cancel{252}^{42}x^{2} + \cancel{6}\sqrt{x} - \cancel{42}^{7}x^{\frac{5}{2}}}{\cancel{144}_{24}}$$

$$\frac{42x^{\frac{5}{2}} + \sqrt{x} - 7x^{\frac{5}{2}}}{24}$$

$$\frac{33\sqrt[2]{x^5} - \sqrt{x}}{24}$$

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