

تابع نقطه در $x=0$ مستقر انبساطی (ریشه ساده) قدری طبق

$$f(x) = \begin{cases} a+|x| & x < 1 \\ b\sqrt[3]{x^2} & x \geq 1 \end{cases}$$

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$$\lim_{x \rightarrow 1^-} f(x), \lim_{x \rightarrow 1^+} f(x) \Rightarrow a+1 = b \Rightarrow a-b = -1$$

$$f'_-(1) = f'_+(1) \Rightarrow 1 = b \times \frac{2}{3} \times 1 \Rightarrow b = \frac{3}{2}$$

$$\left. \begin{matrix} a = \frac{1}{2} \\ a+b = \frac{3}{2} \end{matrix} \right\}$$

$$f_g(x), \frac{2|x-1| + 2\sqrt[3]{x}}{\sqrt[3]{x^2}} \Rightarrow (f-g)(x), \frac{-2\sqrt[3]{x}}{\sqrt[3]{x^2}} = -2\sqrt[3]{x} \times x^{-\frac{1}{3}}$$

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$$(f-g)'(x), 2\sqrt[3]{x} \times \frac{1}{3} \times x^{-\frac{4}{3}} \Rightarrow (f-g)'(1), \frac{\sqrt[3]{2}}{3}$$

$$\lim_{x \rightarrow a^+} f(x) = \lim_{x \rightarrow a^-} f(x) = f(x) \Rightarrow \frac{1}{a} = ab+c$$

$$\left. \begin{matrix} f'_+(a), f'_-(a) \Rightarrow -\frac{1}{a^2} = b \\ \frac{1}{a} = a(-\frac{1}{a^2}) + c \\ \frac{2}{a} = c \Rightarrow ac = 2 \end{matrix} \right\}$$

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$$f'_-(a) \neq f'_+(a)$$

$$0 \neq m(x-a)^{m-1} \Rightarrow m \text{ تمام مقادیر صحیح نامنفی نیست} \Rightarrow \text{۱ مقدار}$$

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$$g'(-\sqrt[3]{2}) \cdot f'(g(-\sqrt[3]{2})) = (f \circ g)'(-\sqrt[3]{2})$$

$$-\sqrt[3]{2} < 0 \Rightarrow |x| = -x, |x^3| = -x^3 \Rightarrow f \circ g(x) = x$$

$$f \circ g'(-\sqrt[3]{2}) = 1$$

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$$f'(x) = -a \quad f(x) = -a(x) - \omega = -x_a - \omega$$

$$-a + x_a + \omega = 1 \Rightarrow x_a = -1 \Rightarrow a = -\frac{1}{1}$$

$$\frac{f(x)}{f'(x)} = \frac{19}{1}$$

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$$(f \circ g)'(x) = g'(x) f'(g(x)) \quad g(x) = (x^2 - 1)^{-\frac{1}{2}} \Rightarrow g'(x) = -\frac{1}{2} (x^2 - 1)^{-\frac{3}{2}}$$

$$\Rightarrow g'(\frac{1}{\sqrt{2}}) = -\frac{1}{2\sqrt{2}} \quad g(\frac{1}{\sqrt{2}}) = 1$$

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

$$(f \circ g)'(\frac{1}{\sqrt{2}}) = -\frac{1}{2\sqrt{2}} \times \frac{1}{\sqrt{2}} = -\frac{1}{4}$$

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$$T(\omega) \Rightarrow f(x_{k+1}) = f(x_k + \omega)$$

$$g'(-1) = f'(-1) + 1 f'(-1) = 2 f'(-1) = 2 \times \frac{1}{\sqrt{2}} = \sqrt{2}$$

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$$\lim_{h \rightarrow 0} \frac{(f(\omega - h) - 1)(f(\omega - h) - 1)}{h(\omega - h)} = \lim_{h \rightarrow 0} \frac{f(\omega - h) - f(\omega)}{h} \times \lim_{h \rightarrow 0} \frac{f(\omega - h) - 1}{\omega - h}$$

$$= -f'(\omega) \times \frac{1}{\omega} = -\frac{1}{\sqrt{2}} \times \frac{1}{\omega} = -\frac{1}{\sqrt{2}}$$

$$f'(x) = 1 \times \sqrt{x+1} + \frac{1}{\sqrt{x+1}} \times (x-1)$$

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

$$x - 1 = \frac{1}{x} \Rightarrow x = \frac{1}{x} \Rightarrow y = \frac{1}{x} \times \frac{1}{x} + \frac{1}{y} = \frac{1}{x^2} \quad (\frac{1}{x} \times \frac{1}{x})$$

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