

① باید در $x=1$ مشتق ناپذیر باشد $\rightarrow$ در $x=0$ پیوسته است و مشتق ندارد $\rightarrow$ $x < 1$ $\begin{cases} a+1 \\ b\sqrt[3]{x} \end{cases}$ $x \geq 1$

$a+1=b$, $\frac{rbx}{\sqrt[3]{x^3}}=1 \Rightarrow b=\frac{r}{r} \Rightarrow a=\frac{r}{r}-1=\frac{1}{r} \Rightarrow a+b=\underline{2}$

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$(f-rg)'(1) = \frac{r|n-r|}{\sqrt[3]{x^3}} - \frac{r|n-r| + \sqrt[3]{rx}}{\sqrt[3]{x^3}} = \frac{-r\sqrt[3]{rx}}{\sqrt[3]{x^3}}$

$\Rightarrow -r\sqrt[3]{r} x^{\frac{1}{3}-\frac{r}{3}} = -r\sqrt[3]{r} x^{-\frac{1}{3}}$ مشتق لایتن $\rightarrow \frac{1}{r}\sqrt[3]{r} x^{-\frac{1}{3}} \xrightarrow{x=1} -\frac{\sqrt[3]{r}}{r}$

$ab+c=\frac{1}{a}$, $b=-\frac{1}{2^r}=\frac{-1}{a^2} \Rightarrow ab=-\frac{1}{a} \Rightarrow -\frac{1}{a}+c=\frac{1}{a}$

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$\Rightarrow c=\frac{r}{a} \Rightarrow ac=(a)(\frac{r}{a})=\underline{r}$

$(n-a)^m+b=b \Rightarrow 1+b=b \times$ غلط $\leftarrow m \neq 0$ است، زیرا $m=0$ باشد

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$m=1 \Rightarrow (n-a)^1+b=b \quad x=a \rightarrow b=b$ غلط

$m > 1 \Rightarrow (n-a)^m+b=b \Rightarrow m(n-a)^{m-1}=0 \rightarrow$ در این حالت $(n-a)$

صفری شود $\leftarrow$ تابع مشتق پذیر می شود $\leftarrow$ مشتق ندارد $\leftarrow [m=1]$

$(f \circ g(-\sqrt[3]{r}))' + f \circ g'(n) \Rightarrow \frac{1}{\sqrt[3]{\frac{1}{x^3}-|\frac{1}{x^3}-|}} = \frac{1}{\sqrt[3]{\frac{r}{x^3}}}$

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$f \circ g(n)=n \Rightarrow (f \circ g)'(n)=1 \Rightarrow (f \circ g)'(-\sqrt[3]{r})=\underline{1}$

$x=r \Rightarrow y=-ra-a \quad y'=-a$

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$f'(r)-f(r)=r \Rightarrow -a+ra+a=r \Rightarrow ra=-r \Rightarrow a=-\frac{r}{r}$

$\frac{f(r)}{f'(r)} = \frac{\frac{r}{r}-a}{\frac{r}{r}} = \frac{-\frac{1}{r}}{\frac{r}{r}} = \underline{-\frac{1}{r}}$

$$(f \circ g)'(\frac{w}{\sqrt{\lambda}}) = g'(\frac{w}{\sqrt{\lambda}}) \times f'(g(\frac{w}{\sqrt{\lambda}}))$$

(v)

$$g'(\frac{w}{\sqrt{\lambda}}) = \frac{-2w}{w \sqrt{\frac{w}{(n-1)^2}}} = \frac{-\frac{w}{f}}{w \sqrt{\frac{1}{\lambda}}} = -\lambda \sqrt{2}, g(\frac{w}{\sqrt{\lambda}}) = 2$$

$$f'(2) = 2 \left(2 \left[2^2 + \frac{1}{2} \right] \right) \left(\left[2^2 + \frac{1}{2} \right] \right) = 94$$

$$\Rightarrow \text{Hence } (f \circ g)'(\frac{w}{\sqrt{\lambda}}) = (-\lambda \sqrt{2}) (94) \Rightarrow \frac{(-\lambda \sqrt{2})(94)}{-12\lambda \sqrt{2}} = \boxed{4}$$

(A)

$$g'(n) = 1 \times f'(n+1) + 3f'(3n+1) \xrightarrow{n=-2}$$

$$g'(-2) = f'(-1) + 3f'(5) \quad (\text{Cascading}) \Rightarrow f'(5) = f'(-1) = \frac{w}{f}$$

$$\Rightarrow g'(-2) = \frac{w}{f} + 3\left(\frac{w}{f}\right) = \frac{4w}{f} = \boxed{4}$$

(9)

$$\frac{(f(a-h)-1)(f(a-h)-2)}{h(a-h)} = \frac{(f(a)-1) \times (-f'(a))}{a} = \left(\frac{1}{a}\right)(-f'(a)) = \frac{1}{a} \left(-\frac{2a}{12}\right) = \boxed{-\frac{a}{12}}$$

$$f'(n) = \frac{w \sqrt{n+1}}{w \sqrt{(n+1)^2}} + \frac{n-2}{w \sqrt{(n+1)^2}} \xrightarrow{n=a} 2 + \frac{1}{12} = \frac{25}{12}$$

$$4y - 3x = 1 \Rightarrow a = \frac{w}{4} = \frac{1}{f} \Rightarrow \text{Cascading} \Rightarrow (-2)$$

(10)

$$y' = 2x - 2 = -2 \Rightarrow x = 1 \Rightarrow \text{Cascading} = \boxed{(1, 2)}$$

$$y = (1)^2 - 2(1) + 2 = 1$$