

هزاره و پنجاه و پنج B

خوشه اول

$$\begin{aligned} & x=1 \Rightarrow a+1=b \\ & \Rightarrow 1 = \frac{2}{3}b \Rightarrow b = \frac{3}{2} \\ & \Rightarrow a = \frac{1}{2} \Rightarrow a+b=2 \end{aligned}$$

$$\begin{aligned} & f'(x) = \frac{-2\sqrt{x^2} - \frac{2}{3}x^{-\frac{1}{3}}(2-x)}{(\sqrt{x^2})^2} \Rightarrow f'(1) = \frac{-2 - \frac{2}{3}(2)}{1} = \frac{-10}{3} \\ & g(x) = \frac{2-x+\sqrt{3x}}{x^{\frac{2}{3}}} \Rightarrow g'(x) = \frac{x^{\frac{2}{3}}(-1+\frac{3}{2\sqrt{3x}}) - \frac{2}{3}x^{-\frac{1}{3}}(2-x+\sqrt{3x})}{x^{\frac{4}{3}}} \\ & g'(1) = \frac{(-1+\frac{3}{2\sqrt{3}}) - \frac{2}{3}(1+\sqrt{3})}{1} = -1 + \frac{\sqrt{3}}{2} - \frac{2}{3} - \frac{2\sqrt{3}}{3} = \frac{-5}{3} - \frac{\sqrt{3}}{2} \\ & f'(1) - 2g'(1) = \frac{-10}{3} + \frac{10}{3} + \frac{\sqrt{3}}{2} = \boxed{\frac{\sqrt{3}}{2}} \end{aligned}$$

$$\begin{aligned} & f(n) \Rightarrow \begin{cases} ba+c = \frac{1}{a} \Rightarrow ba = \frac{1}{a} - c \\ -\frac{1}{a^2} = b \Rightarrow ba^2 = -1 \end{cases} \\ & \Rightarrow a(ba) = -1 \\ & a(\frac{1}{a} - c) = -1 \\ & 1 - ac = -1 \Rightarrow \boxed{ac=2} \end{aligned}$$

$$b+(n-a)^m \Rightarrow m=4k+1$$

لذا

$$\begin{aligned} & \Rightarrow = f \circ g(\sqrt[3]{2}) \\ & \Rightarrow f \circ g(\sqrt[3]{2}) = x \end{aligned}$$

$$f'(a) + f(a) = r \rightarrow -a + 3a + 8 = r \Rightarrow a = \frac{-r}{2} \quad (9)$$

$$\Rightarrow f'(a) = a = \frac{r}{2}$$

$$\log'(x) = g'(x) \cdot f'(g(x)) = \quad (1)$$

$$\left(\frac{-1}{r}\right)(rx)(x^r-1)^{-\frac{r}{r}} \cdot \frac{-rx}{(x^r-1)^r} = \frac{-1}{r} \times \frac{r}{r} \left(\frac{1}{r}\right)^{-\frac{r}{r}} \cdot \frac{-r \times r}{r(1)}$$

$$= \frac{\cancel{r}^1}{\cancel{r}^1} \times \frac{1}{\cancel{r}^1} \times \cancel{r}^r \times \cancel{r}^r = r \times r \rightarrow \frac{r \times r}{-r^r \times \sqrt{r}} = \frac{-r}{\sqrt{r}} \times r = \frac{-1 \times r}{\sqrt{r}} = -\sqrt{r}$$

$$g'(x) = (1) \cdot f'(x+1) + r(f'(x+1)) \Rightarrow \quad (11)$$

$$g'(r) = \frac{r}{r} + \frac{r}{r} = 2$$

$$= \frac{(f(x-h) - f(x))(f(x-h) - 1)}{(x-h)(h)} = \frac{f'(x)}{x} (f(x) - 1) \quad (9)$$

$$\frac{f'(x) = r + \frac{1}{r}}{\rightarrow} \frac{-rx}{x \times 1r} \times 1 = \left[\frac{-r}{1r} \right]$$

$$y = \frac{rx+1}{r} \xrightarrow{\text{y=}} -r = m \Rightarrow rx - r = -r$$

$$\Rightarrow x = 1 \Rightarrow y = r \Rightarrow A \left| \frac{1}{r} \right| : \text{نقطهٔ مماس}$$