

۱۸، ۷۵

کتابخانه

سازیناسی

$$D_{g \circ f} = \{x \mid x \in D_f, f(x) \in D_g\}$$

①

$$\left. \begin{array}{l} \log_r^{x-1} > 0 \Rightarrow x-1 > 1 \Rightarrow x > 2 \\ x-1 > 0 \Rightarrow x > 1 \end{array} \right\} \Rightarrow x \in [2, +\infty) *$$

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$$-x^2 + 4x - 4 > 0 \Rightarrow x^2 - 4x + 4 < 0 \Rightarrow (x-2)^2 < 0 \Rightarrow x=2$$

$$\Rightarrow \sqrt{\log_r^{x-1}} = 2 \Rightarrow x-1 = 14 \Rightarrow x=15 \quad \square$$

$$x \neq 0 \Rightarrow D_{g \circ f} = [15]$$

$$f \circ g = 2x^2 - 4x + 14 - 2 = 2x^2 - 4x + 12$$

②

$$\left. \begin{array}{l} g \circ f = 2x^2 + 2x - 2 - 4x + 12 + 1 = 2x^2 - 4x + 11 \\ \Rightarrow 2x^2 - 4x + 11 = 2x^2 - 4x + 11 \\ \Rightarrow 2x^2 - 2x + 14 = 0 \end{array} \right\}$$

$$2x^2 + 13 = 2x^2 - 2x + 14 \Rightarrow 100 - 14 = 86$$

✓

$$x=t \Rightarrow x = \frac{t}{f} \quad Rg = [1, +\infty) \rightarrow Rg \circ Rg(x-t) \rightarrow \min = 11$$

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③

$$g(t) = \frac{2t^2}{f} + 11 \Rightarrow g(x) = \frac{2x^2}{f} + 11 \Rightarrow g(x-1) = \frac{2x^2}{f} + \frac{24x}{f} + \frac{10x}{f} + 11$$

$$x_5 = \frac{10x}{f} = 10 \Rightarrow y_5 = \frac{-24x}{f}$$

$$2g - f = 2x^2 - 4x - 1$$

④

$$g = \frac{x^2 - 2x + 1}{(x-1)^2} \Rightarrow g(1x-1) = (1x-2)^2 = 1x^2 + 4x - 4$$

$$12x + 12 = 12cx + 12d - 12$$

$$\Rightarrow 12c = 12a \Rightarrow 12a - 12 = 12a \Rightarrow a = 1 \Rightarrow c = 1$$

$$12b = 12d - 12 \Rightarrow 12b = 12d - 12 \Rightarrow b = -1 \Rightarrow d = 1$$

$$g(x) = ax + b$$

$$f(x) = cx + d$$

$$g(x) = 12x - 1$$

$$f(x) = 12x + 1$$

$$f \circ g = 12x + 1$$

$$f \circ g = (c-a)x + d-b \Rightarrow c-a = -1 \Rightarrow c = a-1$$

$$d-b = 0 \Rightarrow d = b$$

$$d-b = 0 \Rightarrow d = b$$

$$\Rightarrow 12x + 1 = 0 \Rightarrow x = -\frac{1}{12}$$

$$\log = y_r^q = x y_r^q = x^r$$

$$\log = y_r^q = x y_r^q = r x$$

$$x^r \leq r x \Rightarrow x^r - r x \leq 0$$

$$\frac{0}{+|-|+} \Rightarrow r \in [0, 1]$$

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$$f\left(x - \frac{r}{x}\right) = \underbrace{x^r + \frac{r}{x^r} - r}_{-(x - \frac{r}{x})^r} + x - \frac{r}{x} \Rightarrow f(x) = x^r + x$$

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$$D_{\log} = \{x \mid x \in \mathbb{R}, g(x) \in D_f\} \quad x \in D_g = \mathbb{R} \setminus \{0\}$$

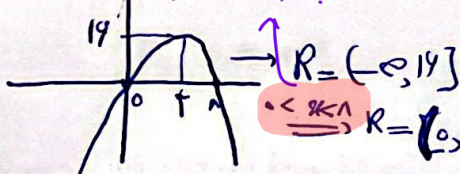
$$D_f = x > 0 \Rightarrow 1x - x^r > 0$$

$$\log = y_r^{1x - x^r}$$

$$\frac{0}{-|-|+} \Rightarrow r \in (0, 1)$$

$$x \cap \mathbb{R} \rightarrow r \in (0, 1) = A$$

دانشجو به صورت معیار مرشد



$$\Rightarrow \log_{\frac{1}{r}}^{[0, 14]} = [1, 14] = R_{\log} = B$$

$$R_g = (-\infty, 14] \xrightarrow{\log_{\frac{1}{r}}} (-\infty, 14]$$

$$A \cap B = [1, 14]$$

معادله

$$R_{\log} = (-\infty, 14]$$

$$D_{\log} = (0, 1) \rightarrow A \cap B = (0, 1]$$

$$\log = y_r^{1x - x^r}$$

$$f(x) = t \rightarrow f(t) = 1 - r t^r \Rightarrow f(x) = 1 - r x^r$$

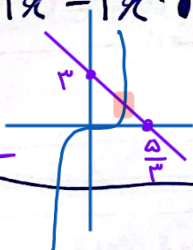
$$h(g(a)) = x^r + r x - r x^r - 1 + r x - r + 1 = x^r - r x^r + r x - r$$

$$= 1 - r x^r$$

$$\Rightarrow x^r + r x - r = 0$$

$$x^r = -r x + r$$

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$$\log = y_r^{1x - x^r}$$

$$\left. \begin{aligned} g\left(x - \frac{r}{x}\right) &= a x^r + r x \\ g(r) &= 1 \end{aligned} \right\} \Rightarrow$$

$$x - \frac{r}{x} = r \Rightarrow x^r - r = r x = x^r - r x + r = 0$$

$$(x - r)(x + 1) \rightarrow x = -1$$

$$x = -1 \Rightarrow -a + \frac{r}{-1} = 1 \Rightarrow a = -1$$

$$x = r \Rightarrow r^r + 1 = 1 \Rightarrow r = 0$$

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