

Subject:

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1. دوازدهم A

A

14 500 liter

$$\sqrt{\log_r^{x-1}} \rightarrow t \rightarrow -t^r \leq t - r \geq 0 \rightarrow -(t-r)^r \geq 0. \quad (1)$$

4 x_1 $\oplus 0, 1, 2, 3 \rightarrow t=2$

$$\log_v x^{-1} = 4 \rightarrow x^{-1} = 14 \quad \underline{x = 14} \mid I$$

7 II $x-1 > 0 \rightarrow x > 1$ III $\log_x^{x-1} \geq 0$ $x-1 \geq 1$
8 $x \geq x$

$$D_{g \circ f} = \{1V\} \checkmark \textcircled{3}$$

$$f(x) = x^2 - 4x + 11$$

$$\log(x) = g \circ f(x) \rightarrow$$

$$g \circ f(x) = 5x^2 - 2x + 11$$

$$g \circ f(x) = 5x^2 - 2x + 1$$

$$\alpha^2 + \beta^2 = \underbrace{(\alpha + \beta)^2}_{-\frac{b}{a}} - \underbrace{\frac{4\alpha\beta}{a}}_{\frac{c}{a}} \rightarrow (10)^2 - 2\left(\frac{5 \times 7}{1}\right) = \underline{49}$$

$$17 \quad g \circ f(x) = a(x^r + 1) \rightarrow a(x^r) = ax^r \rightarrow a = \frac{d}{dx}$$

$$19 \quad g(x) = \frac{1}{2}x^2 + 11 \xrightarrow{x=V} g(x-V) = g(0) = 11 \rightarrow \min$$

$$f \circ g(x) = f(g(x)) - 5 = 3x^2 - 4x - 1 \rightarrow f(g(x)) = 3x^2 - 4x + 3 \quad | \text{f}$$

$$g(x) = x^2 - 2x + 1 \rightarrow (x-1)^2$$

$$24 \quad g \circ f(x) = ((rx - c) - 1)^r \rightarrow (rx - d)^r \rightarrow rx^r + rdx - r \cdot x$$

$$y g(x) = y f(x) - 1 \rightarrow g(x) = \frac{y f(x)}{y} - \frac{1}{y} \leftarrow \text{dividing by } y \quad (2)$$

$$f - g(x) = -x + 2 \rightarrow f(x) - \frac{y}{y} f(x) - \frac{1}{y} = -\frac{1}{y} f(x) + \frac{1}{y}$$

$$\rightarrow -\frac{1}{y} f(x) + \frac{1}{y} = 2 - x \rightarrow f(x) = yx + 1$$

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

$$f \circ g(x) = yx + y$$

$$f(x) = 9^x$$

$$f \circ g(x) = 9^{\log_9 x} \rightarrow x^{\log_9 9} \rightarrow x^1$$

$$g(x) = \log_9 x$$

$$g \circ f(x) = \log_9 9^x = x \log_9 9 = x$$

$$f \circ g(x) \leq g \circ f(x) \rightarrow x^y \leq yx$$

$$x \in [0, y] \rightarrow \boxed{x^y \geq yx}$$

$$x(x-y) \leq 0$$

$$f\left(\frac{x^y - y}{x}\right) = x^y + x - \frac{y}{x} + \frac{y}{x^y} \rightarrow (x^y - \frac{y}{x} + \frac{y}{x^y}) + x - \frac{y}{x}$$

$$\boxed{f(x) = x^y + x} \quad (y)$$

$$f(x) = \log_9 x$$

$$g(x) = -x^y + 11x$$

$$R_{f \circ g} = (-\infty, \infty)$$

$$f \circ g(x) = \log_9^{-x^y + 11x}$$

$$I \cap D_g = \mathbb{R}$$

$$I \cap II \rightarrow (0, 11)$$

$$\log_9^{-x^y + 11x} \rightarrow > 0 \rightarrow \frac{0}{1} + 1 = 1$$

$$D_f = (0, 11)$$

$$x^y > 11x \checkmark$$

$$A \cap B = (0, \infty) \rightarrow \text{never less than } \frac{1}{y}$$

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$$f \circ f(x) = 1 - x^2 f'(x) \rightarrow f(f(x)) = 1 - x^2 f'(x) \quad (9)$$

$$f(x) = 1 - x^2$$

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

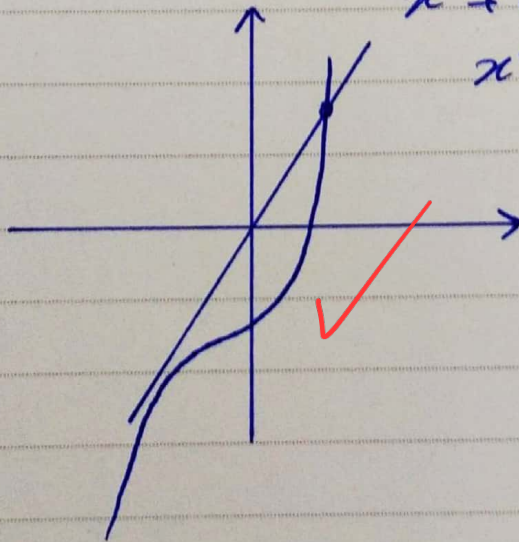
$$\left. \begin{array}{l} g(x) = x - 1 \\ h(x) = x^2 + 2x + 1 \end{array} \right\} \begin{array}{l} h(g(x)) = (x-1)^2 + (x-1) + 1 = x^2 - 2x + 1 + x - 1 + 1 = x^2 - x + 1 \\ h(g(x)) = f(x) \rightarrow x^2 - 2x + 1 = 1 - 2x + x^2 \end{array}$$

$$h(x) = x^2 + 2x + 1$$

$$h(g(x)) = f(x) \rightarrow x^2 - 7x^2 + 2x - 2 = 1 - 7x^2$$

$$\pi^2 \rightarrow \delta\pi - \epsilon = 0$$

$$x^m - m = dx \rightarrow -\frac{1}{2} \textcircled{1}$$



$$17 \quad f(x) = \pi - \frac{t}{x} \quad (1.)$$

$$g(x) = ax^2 + bx \quad \left\{ \begin{array}{l} g(x - \frac{c}{a}) = ax^2 + bx \end{array} \right.$$

19 ~~g~~ $g(x) = ax^2 + bx$

$$g(r) = 1$$

$$x - \frac{f}{x} = 0 \rightarrow x^2 - 2x - 6 = 0$$

22 $x = -1 \rightarrow a = -10 \checkmark$

23 $x = t \rightarrow a = 0$ ~~X~~