Subject:

Year: Month: Day:

۱۴,۲۵

۲۵: شماره ۶ ✱

✱ تکلیف: برگ آبی

page: ( )

$(0,2) \to 1-\log_c^{-b} = 2 \to (a)_c^{-b} = 1 \to -c^{-1} = b \to b+c = -\frac{3}{4} \to$ ①

$c - \frac{1}{c} = -\frac{3}{4} \to c^2 - 1 + \frac{3}{4}c = 0 \to 4c^2 + 3c - 4 = 0 \to$

$c = -4 \times \quad , \quad c = \frac{1}{4} \Rightarrow b = -2 \to (-\frac{3}{4}, 0) \to (a)^{-\frac{3}{4}a+2} = -1 \to$

$-\frac{3}{4}a + 2 = \frac{1}{4} \to a = 1 \to (a+c)b = (1+\frac{1}{4}) \times -2 = -3$ ②

$(a, \frac{1}{3}) \to 1 + c \times 3^a = \frac{2}{3} \to c \times 3^a = -\frac{1}{3}$ ÷ $3^b = 3 \to b = 1$ ③

$(1, 0) \to 1 + c \times 3^{a+b} = 0 \to c \times 3^{a+b} = -1$

$f(-1) = 1 + c \times 3^{a-1} = 1 + c \times 3^a \times \frac{1}{3} = 1 + -\frac{1}{3} \times \frac{1}{3} = \frac{1}{9}$

$(0,2) \to c + \log_a^b = 2 \to -c = \log_a^b - \log_a^{a^2}$ ④

$(2,4,0) \to -c = (a)_a^{2,4a+b} = 0 \to (a)_a^{2,4+b} = \log_a \frac{b}{a} \to$

$2,4a + b = \frac{b}{a} \to 2a\,b + 4a^2 = b \to 4a^2 = -24b \to$ ⑤

$\frac{a}{b} = \frac{-24b}{\frac{4a}{b}} = -\frac{24}{40} = \frac{-2}{10}$

$(|m^2 - 2| - m) > 0 \to |m^2 - 2| > m \quad m > \sqrt{2} \cup m < -\sqrt{2} \quad m^2 - m - 2 > 0$ ⑥

$\to$ (−1, +) (2, +) $\to$ ① $m < -1 \cup m > 2$; $-\sqrt{2} < m < \sqrt{2} \quad -m^2 - m + 2 > 0 \to$

(−2, −) (1, +) $\to$ ② $-2 < m < 1$ ① ∩ ② $\to$ Dy : $m \in (-2, -1)$ ۱,۵

$D = (-\infty, 1) \cup (2, +\infty)$

$m = 1 \to -1 - 3 + 8 = 2 + 2^{b-a} \to 2 = 2^{b-a} \to b - a = 1$ ①

$\to f^{-1}(10) = -1 \to 10 = 2 + 2^{b+a} \to 2^{b+a} = 2^3 \to b + a = 3$ ② ۵

① + ② $\to 2b = 4$, $a = 1 \to 2b - a = 3$

۴

$\to m = 1 \to 0 = -2 + (\frac{1}{2})^{A+B} \to 2 = (\frac{1}{2})^{A+B} \to$ $A + B = -1$ ۵

$\to m = 2 \to 2 = -2 + (\frac{1}{2})^{2A+B} \to 2^2 = 2^{-2A-B} \to$ $2A + B = -2$

$A = -1$, $B = 0 \to f(2) = -2 + 8 = 6$

Arman

سوم

$m_2 = m_1 \times (\frac{8}{9})^h \rightarrow \frac{1}{4} m = m \times (\frac{8}{9})^h \rightarrow \frac{1}{4} = (\frac{8}{9})^h$ (۷)

$\log_3^{\frac{1}{4}} = \log_3^{(\frac{8}{9})^h} \rightarrow \log_3^{2^{-2}} + \log_3^{3^{-1}} = h(\log_3^8 - \log_3^9) \rightarrow$ ۰٫۵

$-\log_3^2 = \frac{-10}{12} = \frac{-5}{6}$, $-\log_3^3 = -\frac{10}{12} = -\frac{5}{6} \rightarrow \log_3^8 = 3 \times \frac{5}{12} = \frac{5}{4}$

$\log_3^9 = 2 \times \frac{5}{6} = \frac{10}{6} \rightarrow \frac{-40 - 15}{360} = h(\frac{45 - 40}{48}) \rightarrow h = 19 \rightarrow 1140$ min

چهارم

$m_2 = m_1 \times (\frac{875}{1000})^\omega \rightarrow$ هفته $\rightarrow \frac{1}{8} = m \times (\frac{7}{8})^\omega \rightarrow \frac{1}{7} = (\frac{7}{8})^\omega$ (۸)

$\log_3^{7^{-1}} = \log_3^{(\frac{7}{8})^\omega} \rightarrow \frac{-10}{4} = \omega(\log_3^7 - \log_3^8) \rightarrow \frac{5}{2} = \frac{2\omega}{3}$ ۰٫۵

$-\frac{5}{3} = \omega(\frac{20 - 15}{3 \times 4}) \rightarrow 1 = \frac{11}{6}\omega \rightarrow \omega = \frac{6}{11} \rightarrow 2,5$ روز (تقریبی)

$P_2 = P_1 \times (\frac{96}{100})^d \rightarrow$ روز $\rightarrow P_1 = 100 \times (\frac{96}{100})^d \rightarrow$ (۹)

$\frac{100}{3} = 100 \times (\frac{24}{25})^d \rightarrow \frac{1}{3} = (\frac{24}{25})^d \rightarrow \log_3^{3^{-1}} = d \log_3^{\frac{24}{25}} \rightarrow$

$-\frac{12}{25} = d(\log_3^{24} - \log_3^{25}) = d(\log_3^3 + \underbrace{\log_3^2 + 2\log_3^2}_{3\log_3^2} - \underbrace{2\log_3^5}_{2\log_3^2 = 2}) \star \rightarrow$ (۵)

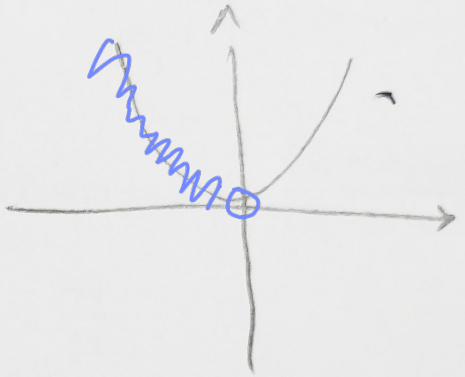
$-\frac{12}{25} = d(-0,02) \rightarrow d = 24$ روز

$\star \log_3^5 = \log_3^{\frac{10}{2}} = \log_3^{10} - \log_3^2 = 1 - \log_3^2$

Arman

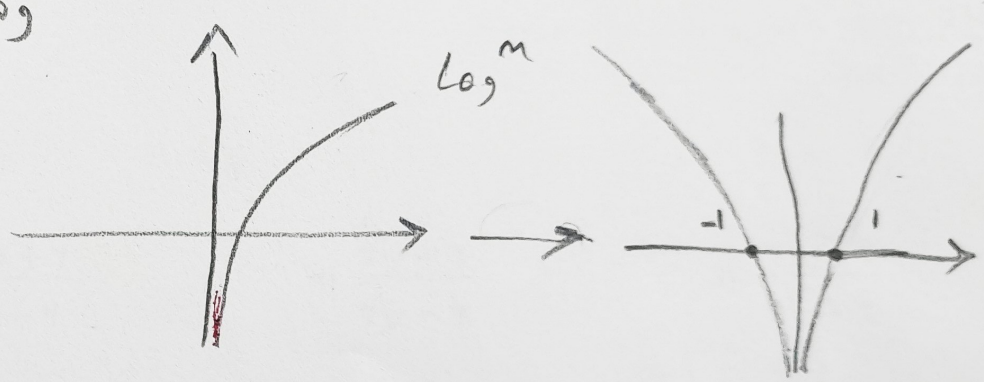
الف) $y = 9^{\log_3 x} \longrightarrow y = x^{\log_3 9} = x^2$

$D = (0, +\infty)$



(۱٫۷۵)

ب) $y = \log x^2 \longrightarrow y = 2\log x$



۷)

$$\left(\frac{۸}{۹}\right)^t = \frac{۱}{۹} \qquad \log\left(\frac{۸}{۹}\right)^t = \log\frac{۱}{۹} \rightarrow t(\log ۸ - \log ۹) = -(\log ۳^۲ + \log ۲^۳)$$

$$\rightarrow t = \frac{-(۲\log ۲ + ۳\log ۳)}{۳\log ۲ - ۲\log ۳}$$

$$\begin{cases} \log ۲^۵ \\ \log ۳^۵ \end{cases} \rightarrow \log ۳^۲ = \frac{۷}{۱۲}$$

$$\div \log ۳ \qquad t = \frac{۱۹}{۳} \qquad \frac{۱۹}{۳} \times ۹۰ = ۳۸۰$$

۸) $\left(\frac{۷}{۸}\right)^t = \frac{۱}{۷} \qquad \log_۳\left(\frac{۷}{۸}\right)^t = \log_۳ \frac{۱}{۷} \rightarrow t(\log_۳ ۷ - \log_۳ ۸) = -\log_۳ ۷$

$$t\left(\frac{۱۰}{۹} - ۳ \times \frac{۵}{۸}\right) = -\frac{۱۰}{۹} \rightarrow t = ۸ \qquad ۸ \times ۷ = ۵۹$$