نام و نام خانوادگی: آیسن عظیمی   تکلیف: ۲۵   کلاس: یازدهم ریاضی

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$y = 1 - \log_c^{ax-b} = \log_c \frac{c}{ax-b} \rightarrow \begin{cases} x = -1/5 \\ y = 0 \end{cases} \Rightarrow \frac{c}{-1/5a-b} = 1 \rightarrow c = -1/5a - b$

$b + c = -1/5a$

$\begin{cases} x = 0 \\ y = 2 \end{cases} \Rightarrow \log_c \frac{-c}{b} \quad (1 - \log_c^{-b}) \rightarrow -b > 0,\ b < 0$

$\log_c \frac{-c}{b} = 2 \rightarrow \frac{-c}{b} = c^2 \rightarrow bc = -1$

از طرفی $b + c = -\frac{3}{2}$ و $-\frac{3}{2}a = -\frac{3}{2}$، $a = 1$

$b + c = -\frac{3}{2}$ ، $c = -\frac{1}{b}$

$b - \frac{1}{b} = -\frac{3}{2} \rightarrow b^2 - 1 = -\frac{3}{2}b$

$b^2 + \frac{3}{2}b - 1 = 0 \rightarrow 2b^2 + 3b - 2 = 0$

$b^2 + 4b - 4 = (b+4)(b-1)$

$(b+2)(2b-1)$

ق ق $c = \frac{1}{2},\ b = -2$

$\times\ c = -2,\ b = \frac{1}{2}$

$(a+c)b \quad b = -2 : (1 + \frac{1}{2}) - 2 = \frac{3}{2} \times -2 = \boxed{-3}$

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$f(x) = 1 + (c \times 3^{a+bx})$ نقطه $\begin{cases} x = 1 \\ y = 0 \end{cases} \rightarrow 0 = 1 + c \times 3^{a+b}$

$c \times 3^{a+b} = -1$ ، $3^a \times 3^b = -\frac{1}{c}$

$3^{a+b} = -\frac{1}{c}$

$\frac{3^a}{3} = \frac{-\frac{1}{3c}}{3} = -\frac{1}{9c}$

$\rightarrow \begin{cases} x = 0 \\ y = \frac{2}{3} \end{cases} \rightarrow \frac{2}{3} = 1 + c \times 3^a$

$c \times 3^a = -\frac{1}{3} \rightarrow 3^a = -\frac{1}{3c}$

$-\frac{1}{3c} \times 3^b = -\frac{1}{c}$ ، $3^b = 3$ ، $b = 1$

$f(-1) = 1 + (c \times 3^{a-1}) = 1 + (c \times -\frac{1}{9c}) = 1 - \frac{1}{9} = \boxed{\frac{8}{9}}$

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$y = c + \log_5^{ax+b}$ نقطه $\begin{cases} x = 0 \\ y = 2 \end{cases} \rightarrow c + \log_5^b = 2 \rightarrow c = 2 - \log_5^b$

$\begin{cases} x = 2/4 \\ y = 0 \end{cases} \rightarrow c + \log_5^{2/4a+b} = 0 \rightarrow c = -\log_5^{2/4a+b}$

$\rightarrow 2 - \log_5^b = -\log_5^{2/4a+b} \rightarrow 2 = \log_5 \frac{b}{2/4a+b} \rightarrow \frac{b}{2/4a+b} = 25 \rightarrow b = 60a + 25b$

$60a = -24b$

$\frac{a}{b} = \frac{-24}{60} = \boxed{\frac{-2}{5}}$

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$f(x) = \log_4 (|x^2 - 2| - x) \rightarrow |x^2-2| - x > 0 \rightarrow |x^2 - 2| > x$

(۱) $x^2 - 2 > x$ و (۲) $x^2 - 2 < -x$

$x^2 - x - 2 > 0$ ، $(x-2)(x+1) > 0$

$x^2 + x - 2 < 0$ ، $(x+2)(x-1) < 0$

$-2 \quad 1$ ؛ $+ \quad - \quad +$

$x : (-2, 1)$

$-1 \quad 2$ ؛ $+ \quad - \quad +$

$x : (-\infty, -1) \cup (2, +\infty)$

(۱)∪(۲)

$-2 \quad -1 \quad 1 \quad 2$

$\boxed{x \in (-\infty, 1) \cup (2, +\infty)}$

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$f(x) = 2 + 2^{b-ax}$ ، $g(x) = -x^2 - 3x + 8$ ، $x = 1 \rightarrow g(1) = -1 - 3 + 8 = 4 \rightarrow f(1) = 4 \rightarrow 2 + 2^{b-a} = 4 \rightarrow 2^{b-a} = 2$

از طرفی $f^{-1}(10) = -1$ ، $f(-1) = 10 \rightarrow 2 + 2^{b+a} = 10 \rightarrow 2^{b+a} = 8$

$b - a = 1$ ، $b + a = 3 \rightarrow a = 1$ ، $b = 2 \rightarrow 2b - a = 4 - 1 = \boxed{3}$

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$f(x) = -۲ + (\frac{1}{۲})^{Ax+B}$ → $g(1) = 0$, $g(۲) = ۲$ → $f(1) = 0$ → $-۲ + (\frac{1}{۲})^{A+B} = 0$ → $۲^{-A-B} = ۲$

$g(x) = y = x^۲ - x$ $\{x : 1, ۲$ $f(۲) = ۲$ → $-۲ + (\frac{1}{۲})^{۲A+B} = ۲$ → $۲^{-۲A-B} = ۴$ ۳   ۶

$\begin{cases} -A-B = 1 \\ -۲A-B = ۲ \end{cases}$ → $A = -1$, $B = 0$

→ $f(x) = -۲ + (\frac{1}{۲})^{-x}$ → $f(۳)$: $-۲ + (\frac{1}{۲})^{-۳} = ۶$

$P(t) = A_0 \times a^{\frac{t}{n}}$ → $\frac{1}{۶} A_0 = A_0 (\frac{۸}{۹})^t$ → $\frac{1}{۶} = (\frac{۸}{۹})^t$ $\log_5$ $\log_5$

باقیمانده: $1 - \frac{1}{۹} = \frac{۸}{۹}$

$\log_3 5 = 1/۴$ → $\log_5 3 = \frac{10}{14} = \frac{5}{7}$ $-\log_5 6 = t(\log_5 \frac{8}{9})$ ۲

$\log_2 5 = ۲/۴$ → $\log_5 2 = \frac{10}{24} = \frac{5}{12}$ $-\log_5 6 = t(\log_5 8 - \log_5 9)$ $t = \frac{19}{3} h$ ۷

$\log_5 8 = 3\log_5 2$, $\log_5 9 = 2\log_5 3$

$\log_5 6 = \log_5 2 + \log_5 3 = \frac{5}{7} + \frac{5}{12} = \frac{95}{84}$ $\frac{19}{3} \times 60 =$ **۳۸۰ دقیقه**

$-\frac{95}{84} = t(\frac{5}{4} - \frac{10}{7})$ → $t = \frac{95}{84} \times \frac{28}{5}$

$P(t) = A_0 \times a^{\frac{t}{n}}$ → $\frac{1}{7} A_0 = A_0 \times (\frac{7}{8})^{\frac{t}{7}}$ → $\frac{1}{7} = (\frac{7}{8})^{\frac{t}{7}}$ $\log_3$ $\log_3$

$1 - 12/5\% = 87/5\% = \frac{7}{8}$

$\log_2 3 = 1/6$ → $\log_3 2 = \frac{10}{16} = \frac{5}{8}$ $-\log_3 7 = \frac{t}{7}(\log_3 7 - \log_3 8)$ ۲   ۸

$\log_7 3 = 0/6$ → $\log_3 7 = \frac{10}{6} = \frac{5}{3}$ $\log_3 8 = 3\log_3 2$ **$t = 56$**

$-\frac{5}{3} = \frac{t}{7}(\frac{5}{3} - \frac{15}{8})$, $-\frac{5}{24}$ → $\frac{t}{7} = \frac{5}{3} \times \frac{24}{5} = 8$

$P(t) = A_0\, a^{\frac{t}{n}}$ → $\frac{1}{3} A_0 = A_0 (\frac{96}{100})^t$ → $\frac{1}{3} = (\frac{96}{100})^t$ $\log_{10}$ $\log_{10}$

غلظت = [illegible] / محلول = $\frac{100 - 4}{100 - 4_{\text{محلول}} + 4_{\text{آب}}} = \frac{96}{100}$ ۲

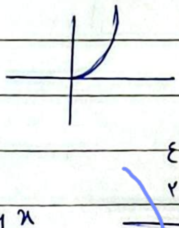
$-\log 3 = t(\log 96 - \log 100)$

$\log 2 = 0/3$ ۹

$\log 3 = 0/48$ → $\log 96 = 5\log 2 + \log 3 = 1/5 + 0/48 = 1/98$ $-0/48 = t(1/98 - 2)$, $-0/02$

$t = 24$ روز

الف) $y = 9^{\log_3 x} = x^{\log_3 9} = x^2$ → $x > 0$ =>



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ب) $y = \log x^2 = 2\log x$ $D = \mathbb{R} - \{0\}$