یازدهم دهم   تکلیف کدها   نیایش شاه نظری

$y = 1 - \log_c (ax - b)$

① ضریب تابع لگاریتم منفی است پس $0 < c < 1$

$x = 0 \rightarrow 1 - \log_c^{-b} = 2 \rightarrow \log_c^{-b} = -1 \rightarrow \frac{1}{c} = -b \rightarrow \boxed{bc = -1}$

$x = -\frac{3}{2} \rightarrow 1 - \log_c \left(-\frac{3}{2}a - b\right) = 0 \rightarrow c = -\frac{3}{2}a - b$

$c + b = -\frac{3}{2}a \rightarrow -\frac{3}{2}a = -\frac{3}{2}$

$\boxed{a = 1}$

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

$bc = -1 \rightarrow b^2 + \frac{3}{2}b - 1 \Rightarrow \Delta = \frac{25}{4} \quad x = \frac{-\frac{3}{2} \pm \frac{5}{2}}{2}$

$-b - \frac{3}{2}$

$\rightarrow x = -2 \quad c = \frac{1}{2}$ قابل قبول

$\rightarrow x = +\frac{1}{2} \rightarrow c = -2$ غ ق ق

$a = 1 \; , b = -2 \quad c = \frac{1}{2} \rightarrow (a + c)b = -2\left(\frac{3}{2}\right) = \boxed{-3}$

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②

$f(x) = 1 + c \times 3^{a + bx} \qquad x = 1 \rightarrow 1 + c \times 3^{a+b} = 0$

$\boxed{c \times 3^{a+b} = -1} \rightarrow (c \times 3^a) \times 3^b = -1 \rightarrow 3^b \Rightarrow \boxed{b = 1}$

$-\frac{1}{3}$

$x = 0 \rightarrow 1 + c \times 3^a = \frac{2}{3} \rightarrow c \times 3^a = -\frac{1}{3}$

موضوع: ________ تاریخ: / /

$f(-1) = 1 + c \times ۳^{a-1} = 1 + \frac{\cancel{c \times ۳^{a}}^{\,-\frac{1}{۳}}}{۳} = 1 - \frac{1}{۹} = \frac{۸}{۹}$

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۳)

$y = c + \log_{۵}^{ax+b}$ $\quad x=0 \to c + \log_{۵}^{b} = ۲$

$x = \frac{۱۲}{۵} \to c + \log_{۵}^{\frac{۱۲}{۵}a+b} = 0$

$\log_{۵}^{b} - \log_{۵}^{\frac{۱۲}{۵}a+b} = ۲$

$\frac{b}{\frac{۱۲}{۵}a+b} = ۲۵ \to ۶۰a + ۲۵b = b$

$۶۰a = -۲۴b$

$\frac{a}{b} = \frac{-۲۴}{۶۰} = \boxed{\frac{-۴}{۱۰}}$

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۴)

$f(x) = \log_{۴}(|x^۲-۲|-x)$ $\quad |x^۲-۲|-x>0$

① $x>\sqrt{۲},\ x<-\sqrt{۲} \to x^۲-x-۲>0$

-1		۲	
$+$	$-$		$+$

$x \in (-\infty,-\sqrt{۲}) \cup (۲,+\infty)$

② $-\sqrt{۲}<x<\sqrt{۲} \to -x^۲-x+۲>0$

$x^۲+x-۲<0$

-۲		1	
$+$	$-$		$+$

$x \in (-\sqrt{۲},1)$

$\boxed{D_f = (-\infty,-\sqrt{۲}) \cup (-\sqrt{۲},1) \cup (۲,+\infty)}$

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۵)

$f(x) = ۲ + ۲^{b-ax}$

$g(x) = -x^۲-۲x+۸ \to x=1 \quad y=۴ \to ۲+۲^{b-a} = ۴ \to b-a=1$

$f^{-1}(۱۰) = -1 \to f(-1) = ۱۰ \to ۲+۲^{b+a} = ۱۰ \to b+a=۳$

$\begin{cases} b-a=1 \\ b+a=۳ \end{cases}$

$۲b = ۴$

$\boxed{b=۲}$ $\boxed{a=1}$ $\to ۲b-a = ۳$

تاریخ: / /

موضوع:

(۶)

$f(x) = -2 + \left(\frac{1}{2}\right)^{Ax+B}$

$y = x^2 - x \rightarrow x = 1 , y = 0 \rightarrow -2 + \left(\frac{1}{2}\right)^{A+B} = 0 \rightarrow A+B = -1$

$\searrow x = 2 , y = 2 \rightarrow -2 + \left(\frac{1}{2}\right)^{2A+B} = 2 \rightarrow 2A+B = -2$

$A = -1$, $B = 0$

$f(3) = -2 + \left(\frac{1}{2}\right)^{-(3)} = -2 + 8 = 6$

(۷)

$P = P_0 a^{xt} \Rightarrow \frac{1}{4} P_0 = P_0 \times \left(\frac{8}{9}\right) \rightarrow \log_{\frac{8}{9}} \frac{1}{4} = xt\,h$

$\log_3 5 = \frac{7}{5} \rightarrow \frac{\log 3}{1 - \log 2} = \frac{5}{7}$

$\frac{\log \frac{1}{4}}{\log 8 - \log 9} = xt\,h$

$1 + \log_2 = 2,4 + 1 \rightarrow \log 2 = \frac{5}{17}$

$7 \log 3 = 5 - \frac{25}{17}$

$\log 3 = \frac{60}{119}$

$= \frac{-(\log 2 + \log 3)}{3 \log 2 - 2 \log 3}$

$\frac{95}{15} = \frac{\frac{-95}{119}}{\frac{-15}{119}} = \frac{-\left(\frac{95}{119}\right)}{\frac{105}{119} - \frac{120}{119}}$

$\rightarrow \frac{19}{3} h \rightarrow \frac{19}{3} \times 60 = 380 \text{min}$

(۸)

$P = P_0 a^{xt} \rightarrow \frac{1}{7} P_0 = P_0 \times \left(\frac{7}{8}\right)^x \rightarrow x = \log_{\frac{7}{8}} \frac{1}{7} =$

$8 = \frac{\frac{-5}{3}}{\frac{-5}{24}} = \frac{-\frac{5}{3}}{\frac{5}{3} - \frac{15}{8}} = \frac{-\frac{5}{3}}{\frac{5}{3} - 3\left(\frac{5}{8}\right)} = \frac{-\log_3 7}{\log_3 7 - 3 \log_3 2}$

موضوع: تاریخ: / /

(۹)

$$P=P_0\,a^{xt} \rightarrow \frac{1}{3}P_0 = P_0 \times (0.96)^{x} \rightarrow x=\log_{0.96}\frac{1}{3}$$

$$x=\frac{-\log 3}{\log 96-\log 100}=\frac{-0.48}{5\log 2+\log 3-2}$$

$$\frac{-0.48}{1.5+0.48-2}=\frac{-0.48}{-0.02}=$$

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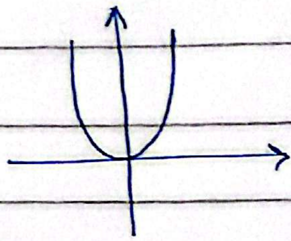
(۱۰)

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



ب) $y=\log x^2=2\log x$