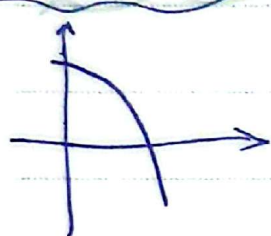


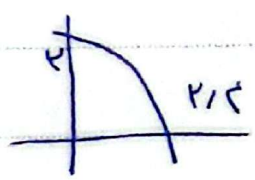
$x=0 \rightarrow y=1 - \log_c^{-b} - 2 \quad bc=1$ (1)

$\begin{cases} bc=1 \\ bc=1 \end{cases} \rightarrow b=2 \checkmark$
 $b = \frac{1}{c} \rightarrow$ (بسیار ساده است) (2)

$x=1/8 = -\frac{1}{4} \rightarrow 1 - \log_{\frac{1}{4}}^{-\frac{1}{4}a+2} = 0 \rightarrow a=1$
 $(a+c)b=3$



$f(x) = 1 + c x^{b+a}$ (1)
 $f(0) = 1 + c x^a = -\frac{1}{4} \quad c, a = -1$
 $f(1) = 1 + c x^{b-1} = 0$
 $-1 x^{b-1} = -1 \quad x^{b-1} = 1 \rightarrow b=2$ (2)



$y = c + \log_0(a x + b)$ (1)
 $1 = c + \log_0 b \rightarrow c=1, b=2$
 $0 = 1 + \log_0(a x + 2) = -1 \rightarrow a x + 2 = \frac{1}{2}$
 $\frac{a}{b} = -\frac{1}{2} \rightarrow \boxed{a = -2}$ (2)

$f(x) = \log_0(|x^2 - 1| - x) \quad |x^2 - 1| - x > 0$ (1)

$|x^2 - 1| - x > 0$
 $-x^2 + 2 < x < x^2 - 2$
 $x^2 - x - 2 > 0$
 $(x+2)(x-1) > 0$
 $x < -2 \quad \text{or} \quad x > 1$ (2)

از دست راه
 $\frac{1215}{100} \rightarrow$ هر هفته
 $\frac{1}{\sqrt{v}}$ باقی ماند

$\frac{v \wedge 15}{100}$ مانده

$A_n = A_0 \times \left(\frac{v}{\lambda}\right)^n$ (1)

$\frac{1}{\sqrt{v}} A_0 = A_0 \times \left(\frac{v}{\lambda}\right)^n \rightarrow \sqrt{v} = \left(\frac{\lambda}{v}\right)^n$ طرف \log $\log_{\sqrt{v}} = \log_{\frac{\lambda}{v}}$

$\frac{1}{\log_{\sqrt{v}}} = n \left(\log_{\frac{\lambda}{v}} - \frac{1}{\log_{\sqrt{v}}} \right) \rightarrow \frac{0}{\sqrt{v}} = n \left(\log_{\frac{\lambda}{v}} - \frac{0}{\sqrt{v}} \right) \Rightarrow n = \frac{\frac{0}{\sqrt{v}}}{\log_{\frac{\lambda}{v}} - \frac{0}{\sqrt{v}}}$
 $\lambda \times v = \boxed{84}$ روز

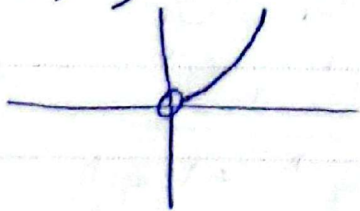
$A_0 = 100L$ $\frac{44}{100}$ مانده $= \left(\frac{44}{100}\right)^n$

$\frac{1}{\sqrt{v}} A_0 = A_0 \left(\frac{44}{100}\right)^n$ $\frac{1}{\sqrt{v}} \left(\frac{100}{44}\right)^n$ $\log_{\frac{100}{44}} = \log_{\frac{100}{44}}$

$n \log_{\frac{100}{44}} = \frac{100}{44} \times 1.41$ $n = \frac{1.41 \times 100}{\log_{\frac{100}{44}} - \log_{\frac{100}{44}}}$ $= \frac{1.41 \times 100}{\log_{100} - \log_{44} - \frac{1}{2} \log_{100} - \log_{44}}$

$\frac{1.41 \times 100}{2 \times 1.41} = \boxed{44}$

الف) $y = 4 \log_{\frac{1}{4}} x$ $x \in (0, +\infty)$



$y = n \log_{\frac{1}{4}} x$ $(1, 0)$

ب) $y = \log x^2$ $x \in \mathbb{R} \setminus \{0\}$ $y = \log x^2 = 2 \log x$

عوض x با $-x$ برابر می کنیم

