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$(0,2) \Rightarrow 2 = 1 - \log_c^{-b} \Rightarrow \log_c^{-b} = -1 \Rightarrow -b = \frac{1}{c} \rightarrow c - \frac{1}{c} = -\frac{3}{2} \Rightarrow 2c^2 + 3c - 2 = 0 \rightarrow c = \frac{1}{2}$ ✓, $c = -4$ ✗

$\Rightarrow b = -(\frac{1}{\frac{1}{2}}) = -2$

$(-1.5, 0) \Rightarrow y = 1 - \log_{2^{-1}}^{(-1.5a+2)} = 0 \Rightarrow \log_2^{(-1.5a+2)} = -1 \Rightarrow -1.5a + 2 = 0.5 \Rightarrow 2a = 2 \Rightarrow a = 1$

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

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

$(1,0) \Rightarrow 1 - 1 \times 3^{b-1} = 0 \Rightarrow 3^{b-1} = 1 \Rightarrow b - 1 = 0 \Rightarrow b = 1$

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

-۳

$(0,2) \Rightarrow c + \log_5^b = 2 \Rightarrow c = 2 - \log_5^b \Longrightarrow y = 2 - \log_5^b + \log_5^{ax+b}$

$(2.4, 0) \Rightarrow \log_5^{25} - \log_5^b + \log_5^{2.4a+b} = 0 \longrightarrow \log_5^b - \log_5^{25} = \log_5^{2.4a+b} \Rightarrow \frac{b}{25} = \frac{12}{5}a + b$

$\Rightarrow -\frac{24}{25}b = \frac{12}{5}a \longrightarrow \frac{a}{b} = \frac{-\frac{24}{25}}{\frac{12}{5}} = -\frac{2}{5} = -0.4$

-۴

$\log_4^{(|x^2-2|-x)} \Rightarrow |x^2-2| - x > 0$ ① $\Rightarrow x^2 - 2 > x \Rightarrow x^2 - x - 2 > 0$ (sign table: roots -1, 2: $+$ $-$ $+$)

② $\Rightarrow x^2 - 2 < -x \Rightarrow x^2 + x - 2 < 0$ (sign table: roots -2, 1: $+$ $-$ $+$)

$\xRightarrow{1 \cup 2} (-\infty, 1) \cup (2, +\infty)$

-۵

$g(1) = -1 - 3 + 8 = 4 \Rightarrow f(1) = 2 + 2^{b-a} = 4 \Rightarrow b - a = 1 \Rightarrow b = 1 + a$

$f^{-1}(10) = -1 \Rightarrow f(-1) = 10 = 2 + 2^{a+b} \Rightarrow 2^{2a+1} = 8 \Rightarrow 2a + 1 = 3 \Rightarrow a = 1 \rightarrow b = 2$

$2b - a = 4 - 1 = 3$

-۶

$y_1 = 1 - 1 = 0$ $f(1) = -2 + (\frac{1}{2})^{A+B} = 0 \Rightarrow (\frac{1}{2})^{A+B} = 2 \Rightarrow A + B = -1$

$y_2 = 4 - 2 = 2$ $f(2) = -2 + (\frac{1}{2})^{2A+B} = 2 \Rightarrow (\frac{1}{2})^{2A+B} = 4 \Rightarrow 2A + B = -2$

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

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

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$\frac{1}{4}m = (\frac{8}{9})^t m \Rightarrow \lg \frac{1}{4} = \frac{\lg 4^{-1}}{\lg \frac{8}{9}} = \frac{-(\lg 2^2 + \lg 3^2)}{3\lg 2^2 - 2\lg 3^2} = \frac{\frac{10}{24} + \frac{10}{14}}{\frac{20}{14} - \frac{30}{24}}$ -۷

$\lg 3^{\frac{24}{10}} = \lg 2^2 \Rightarrow \lg 2^2 = \frac{10}{24}$

$\lg 5^{\frac{14}{10}} = \lg 3^2 \Rightarrow \lg 3^2 = \frac{10}{14}$

$= \frac{140 + 240}{480 - 420} = \frac{19}{3} h \times 40 = 380 min$

$100 - 12/5 = 87/5 \Rightarrow (\frac{87/5}{100})^t m = \frac{1}{2} m \Rightarrow t = \lg \frac{1}{2}^{-1} = \frac{-\lg \frac{7}{8}}{\lg \frac{7}{8} - 3\lg \frac{2}{3}}$ -۸

$\lg 2^{\frac{3}{7}} = 0/4 \Rightarrow \lg \frac{7}{8} = \frac{10}{4}$

$\lg 3^{\frac{2}{2}} = 1/4 \Rightarrow \lg \frac{2}{3} = \frac{10}{14}$

$= \frac{-\frac{10}{4}}{\frac{10}{4} - \frac{30}{14}} = 8$ سنه $\times 7 = 56$ روز

$100 - 4 = 96 \Rightarrow \frac{1}{3} x = (\frac{96}{100})^t x \Rightarrow \lg 3^{-1}_{0/96} = \frac{\lg 3^{-1}}{\lg 96 - \lg 100} = \frac{-\lg 3}{\lg 3 + 5\lg 2 - 2}$ -۹

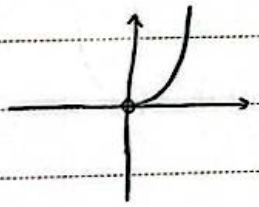
$= \frac{-0/48}{0/48 + 1/5 - 2} = \frac{-0/48}{-0/02} = 24$ روز

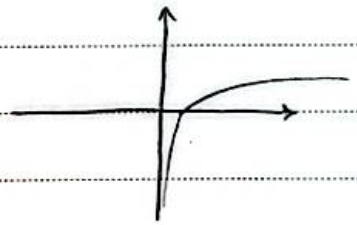
-۱۰ ب) $\lg x^2 = 2\lg x$

x	10	100	1000
y	2	4	6

الف) $y = 9^{\lg \frac{x}{3}} = x^{\lg \frac{9}{3}} = x^2$

$x > 0$





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