نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۲۰ کلاس ..... A .....

۱

$x=0 \to y=2 \to \log_c^{-b} = -1 \to -b = \frac{1}{c}$

$x=-1/5 \to y=0 \to \log_c^{-1/5a-b} = 1 \to c = -1/5a - b \to c+b = -\frac{3}{2}a$

$\xrightarrow{c+b=-\frac{3}{2}}$ غیق $a=1,\ c+\frac{1}{c} = -\frac{3}{2} \to c = -2, -\frac{1}{2} \to b = -2$

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

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$x=1 \to y=0 \to c \times 3^{a+b} = -1,\ x=0 \to y = \frac{2}{3} \to c \times 3^{a} = -\frac{1}{3}$

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

$= 1 - \frac{1}{9} = \frac{8}{9}$

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$\left.\begin{array}{l} c + \log_{\omega}^{2/4a+b} = 0 \\ c + \log_{\omega}^{b} = 2 \end{array}\right\} \xrightarrow{-} \log_{\omega}^{2/4a+b} - \log_{\omega}^{b} = -2$

$\to \frac{2/4a+b}{b} = -2 \to 2/4(\frac{a}{b}) = -3 \to \frac{a}{b} = -\frac{5}{4}$

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$|x^2-2|-x>0 \to x \in (-\infty, -\sqrt{2}] \cup [\sqrt{2}, +\infty)$ ① $\to x^2-x-2>0 \to x \in (-\infty,-1) \cup (2,+\infty)$ ②

$\to$ ① ∩ ② $\to x \in (-\infty, -\sqrt{2}] \cup (2, +\infty)$ ⑤

$x \in (-\sqrt{2}, \sqrt{2})$ ③ $\to x^2+x-2<0 \to x \in (-2,1)$ ④ $\to$ ③ ∩ ④ $\to x \in (-\sqrt{2}, 1)$ ⑥

$\to$ ⑤ ∪ ⑥ $\to x \in (-\infty, 1) \cup (2, +\infty)$

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$\left.\begin{array}{l} x=1 \to y=4 \to 2^{b-a} = 2 \to b-a=1 \\ x=-1 \to y=10 \to 2^{b+a} = 8 \to b+a=3 \end{array}\right\} b=2,\ a=1$

$\to 2b-a=3$

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$$x=1 \to y=0 \to \left(\frac{1}{2}\right)^{A+B}=2 \to A+B=-1$$
$$x=2 \to y=2 \to \left(\frac{1}{2}\right)^{2A+B}=4 \to 2A+B=-2$$
$$\to A=-1, B=0$$

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

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$$M_2=M_1\times\left(\frac{4}{9}\right)^t \to \frac{1}{4}M_1=M_1\times\left(\frac{4}{9}\right)^t=\frac{1}{4}=\left(\frac{4}{9}\right)^t$$

$$\log_{\frac{4}{9}}\frac{1}{4}=t \to \log_{\frac{8}{5}}\frac{4}{9}=t=\frac{\log_5 4}{\log_5 \frac{8}{9}}=\frac{\log_5^2+\log_5^3}{\log_5 9-\log_5 8}=\frac{\frac{5}{12}+\frac{5}{7}}{\frac{10}{7}-\frac{10}{12}}=\frac{95}{10}$$

$$=\frac{19}{2}h=380\ min$$

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$$M_2=M_1\times\left(\frac{7}{8}\right)^t \to \frac{1}{7}M_1=M_1\times\left(\frac{7}{8}\right)^t \to \frac{1}{7}=\left(\frac{7}{8}\right)^t$$

$$\to \log_{\frac{8}{7}}7=t=\frac{\log_3 7}{\log_3 \frac{8}{7}}=\frac{5}{\frac{10}{8}-\frac{5}{3}}=\frac{30}{5}=8 \text{ هفته} = 54 \text{ روز}$$

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$$A_2=A_1\times\left(\frac{94}{100}\right)^t \to \frac{1}{3}A_1=A_1\times\left(\frac{94}{100}\right)^t$$

$$\frac{1}{3}=\left(\frac{94}{100}\right)^t \to \log_{\frac{94}{100}}\frac{1}{3}=t=-\frac{1}{\log_3 \frac{94}{100}}$$

$$\log_3 \frac{94}{100}=\frac{\log_{10}94}{\log_{10}3}-\underbrace{\frac{\log_3 100}{\frac{100}{24}}}=\frac{33}{8}-\frac{100}{24}=-\frac{1}{24} \to t=24 \text{ روز}$$

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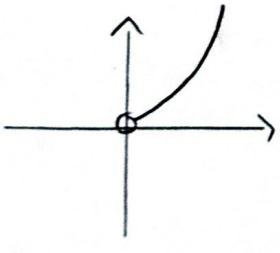
الف) $y=\log_2^x \xrightarrow{x>0} y=x^2$



$$y=\log_{10}^{x^2} \to x^2>0 \to x\in R-\{0\}$$

$$y=2\log_{10}^{|x|}$$