

نام و نام خانوادگی آبروی میبندی پاسخنامه تشریحی تکلیف شماره ۲۴ ... کلاس ... یا ...

$y = x^p \xrightarrow{x=1} y=1$ $f(x) = x^{A+B}$ $\xrightarrow{x=1} f(1) = 1^{A+B} \Rightarrow f(x) = y$ (۲)
 $y = x^p \xrightarrow{x=3} y=9$ $f(x) = x^{A+B} \xrightarrow{x=3} f(3) = 3^{A+B} = 9 \Rightarrow 3^{A+B} = 9 \Rightarrow 3^{A+B} = 3^2 \Rightarrow A+B=2$
 $f(x) = x^{n-1} \xrightarrow{x=0} f(0) = 0^{n-1} \Rightarrow (0, \frac{1}{p})$ ✓ $\left. \begin{matrix} A+B=0 \\ 3^{A+B}=9 \end{matrix} \right\} \Rightarrow A=1, B=-1$

وقت! $x+15 = x^2 \Rightarrow x^2 - x - 15 = 0$
 $x^2 + 15 = x^{n+3} \Rightarrow x^{n+3} - x^2 - 15 = 0$
 $x^2 + 15 = x^{n+3} \xrightarrow{x^2 = t} t^{\frac{n+3}{2}} - t - 15 = 0$ $\begin{cases} t=3 = x^2 \\ t=5 = x^2 \end{cases}$
 $x = \log_x 3$ $\xrightarrow{\text{همه ریشه}} \log_x 15$
 $x = \log_x 5$

$\log_{x_1}^p = a \Rightarrow (\log_{x_1}^p)^p = a^p$ $\log_{x_1}^{1/p} \Rightarrow \log_{x_1}^{p/p} - \log_{x_1}^p = p - a$ (۲)
 $\log_{x_1}^{1/p/p/p} = \log_{x_1}^{p/p} + \log_{x_1}^p = p + a \Rightarrow (\log_{x_1}^p)^p + \log_{x_1}^{1/p} \log_{x_1}^{1/p/p/p} = p + a$ ✓

$x^p - 2n+1 \rightarrow \log_{(1-x)^p} = p \log_{1-x} = a \Rightarrow a \log_{1-x} = a \Rightarrow \log_{1-x} = 1$ (۲)
 $1-x = 1 \Rightarrow -x = 0 \Rightarrow x = 0$ $\Rightarrow \log_{x_0}^{-n} = p$ ✓

$\log_x^{n^2-2n+1} + \log_x^{n-2} = \log_x 1$ $\Rightarrow (n^2 - 2n + 1)(n-2) = 1$ (۲)
 $\Rightarrow n^2 - 2n^2 + 2n - 2n + 4 = 1 \Rightarrow -n^2 + 4 = 1 \Rightarrow n^2 = 3$
 $n = \sqrt{3}$
 $\log_{\sqrt{2}}^n = \log_{\sqrt{2}}^{\sqrt{14}} = 2$ ✓

$$\log^{(r-n)} - \log \frac{1}{(r-n)^r} = r \Rightarrow \log \frac{r-n}{(r-n)^r} = \log 1000 \Rightarrow (r-n)^r = 1000$$

$$\Rightarrow r-n = 10 \Rightarrow n = -1$$

$$\log \frac{1}{\sqrt{r}} = 4 \checkmark$$

(2)

6

$$\log \frac{n-r}{4} \rightarrow n-r > 0 \Rightarrow n > r$$

$$r^{n-r} = r^{\epsilon n} \Rightarrow n-r = \epsilon n \Rightarrow n^r - \epsilon n - r = 0 \Rightarrow n \begin{cases} r+\sqrt{4} \checkmark \\ r-\sqrt{4} \checkmark \end{cases}$$

(2)

7

$$\log \frac{n-r}{4} = \log \frac{\sqrt{4}}{4} = \frac{1}{r} \checkmark$$

$$\log \frac{1}{11} = \frac{r \log r}{r + \log r} \Rightarrow \frac{r \frac{3}{r}}{r + \frac{3}{r}} \Rightarrow \frac{3}{r} \checkmark$$

(2)

8

$$\log \frac{4}{12} = \frac{\log 4}{\log 12} \Rightarrow \frac{\log 4^r + \log 4^r}{\log 4^r + \log 4^r} \Rightarrow \frac{1, r}{1, r} \checkmark$$

(2)

9

$$n = -1 \Rightarrow a \log^r - a + b \log^r = 0 \Rightarrow a \log^r + b \log^r = a$$

$$a - a \log^r = b \log^r \quad 1 - \log^r = \log^1 - \log^r = \log \frac{10}{r} = \omega$$

$$a(1 - \log^r) = b \log^r$$

$$a \log \omega = b \log^r \Rightarrow \frac{b}{a} = \log \frac{\omega}{r} \Rightarrow (\sqrt{r})^{\log \frac{\omega}{r}} = \sqrt{\omega} \checkmark$$

(2)

10