

$$x^p = r^{Ax+B}$$

$$\rightarrow (1,1) \text{ و } (1^3, 9) \Rightarrow r^{A+B} = 1 \Rightarrow A+B=0$$

$$r^{3A+B} = 9 \Rightarrow 3A+B=2 \Rightarrow A=1, B=-1$$

تكميل ساره

سؤال 10

$$\Rightarrow r^{x-1} \xrightarrow{m=0} \boxed{y = \frac{1}{r}}$$

$$r^{x+p} = r^x + 1 \Rightarrow r^x \times r^p = r^x + 1 \Rightarrow r^x (r^p - 1) = 1$$

$$r^x = t \Rightarrow t(r^p - 1) = 1 \Rightarrow t^p - 1t + 1 = 0 \Rightarrow t = r, 1 \Rightarrow r^x \rightarrow r$$

$$\Rightarrow x = \log_r r^p, \log_r 1 \Rightarrow \log_r 1$$

لحل

$$(\log_r r^p)^r + \log_r r^p \times \log_r r^p$$

$$\Rightarrow (1 - \log_r r^p)^r + (1 + \log_r r^p) (r(1 - \log_r r^p) + (1 + \log_r r^p))$$

$$(1 - \log_r r^p)^r + r(1 - \log_r r^p)^r + (1 + \log_r r^p)^r \Rightarrow 1 + t^r - r t^r + r - t^r + 1 + t^r + r t^r = 2$$

$$r \log(1-x) + r \log(1-x) = 0 \Rightarrow \log(1-x) = 1 \Rightarrow 1-x = 10 \Rightarrow x = -9$$

$$\log_r r^9 = \boxed{9}$$

$$x^r - rx + 1 > 0 \quad 1-x > 0$$

$$\log_r (x^r + rx + r) + \log_r (x-r) = 3 \Rightarrow \log_r \frac{(x^r + rx + r)(x-r)}{r} = 3 \Rightarrow (x^r + rx + r)(x-r) = r^4$$

$$x^r - rx + rx + r - rx - r + rx - r = r \Rightarrow x^r = 1 \Rightarrow x = \sqrt[r]{r} = 1$$

$$\Rightarrow \log_r \sqrt[r]{r} = \boxed{1}$$

$$x-r > 0 \quad x^r + rx + r > 0$$

$$\log_r (r-x) - \log_r \frac{1}{(r-x)^r} = 3 \Rightarrow \log_r (r-x) = 3 \Rightarrow r-x = 10 \Rightarrow x = -9$$

$$\log_r \sqrt[r]{r} = \boxed{1}$$

$$r-x > 0 \quad (r-x)^r > 0 \Rightarrow \boxed{x = -9}$$

$$x^r - r = rx \Rightarrow x^r - rx - r = 0 \Rightarrow \frac{r \pm \sqrt{r^2}}{r} \Rightarrow r \pm \sqrt{r} = 0$$

$$\log_r (x-r) \Rightarrow r = \sqrt[r]{r} \Rightarrow (x-r) = \sqrt[r]{r} \Rightarrow \log_r \sqrt[r]{r} = \boxed{1}$$

سوال ۸۷

$$\log_3 4 = \frac{a}{\lambda} \quad \log_3 \lambda = ? \Rightarrow \log_3 4 = \frac{a}{\lambda} \rightarrow \frac{4}{\log_3 \lambda} = \frac{4}{1 + \log_3 4} = \frac{4}{1 + \frac{a}{\lambda}}$$

$$\rightarrow \frac{4}{\frac{a}{\lambda}} = \frac{4}{1 + \frac{a}{\lambda}} \Rightarrow \frac{4\lambda}{a} = \frac{4\lambda}{\lambda + a} \Rightarrow \frac{4\lambda}{a} = \frac{4\lambda}{\lambda + a}$$

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سوال ۹۰

$$\log_9 4 = \frac{\lambda}{10} \quad \log_9 9 = ?$$

$$\log_9 4 = \frac{\lambda}{10} \Rightarrow \log_9 16 = \frac{2\lambda}{5} \quad \log_9 16 = \frac{a}{\lambda} \rightarrow 1 - \log_9 4 = \log_9 16$$

$$\frac{1 - \frac{\lambda}{10}}{1} = \frac{2\lambda}{5} \Rightarrow 1 - \frac{\lambda}{10} = \frac{2\lambda}{5} \Rightarrow 1 = \frac{4\lambda}{5} \Rightarrow \lambda = \frac{5}{4}$$

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سوال ۱۰۰

$$(a \log_3 r) x^r + a x + b \log_3 r = 0 \Rightarrow \frac{0}{-1} a = (a+b) \log_3 r \Rightarrow \log_3 r = \frac{a}{a+b}$$

$$\frac{1}{\log_3 r} = 1 + \frac{b}{a} \Rightarrow \log_3 r = \frac{a}{a+b} \Rightarrow \log_3 r = \frac{a}{a+b} \Rightarrow (\sqrt{r})^{\log_3 a} = \sqrt{a}$$