$f(x) = 3^{Ax+B}$

$0 = x^2 \Rightarrow 1,3 \Rightarrow 19$

$3^{A+B} = 27 \quad 3^{2A+B} = 3^2$

$A+B=0$
$2A+B=2 \Rightarrow A=1$
$B=-1$

$\log_2(4^x+15) = x+3 \Rightarrow 4^x+15 = 2^{(x+3)}$

$\frac{2^{2x}}{(2^x)^2} - 8(2^x) + 15 = 0 \quad (2^x-5)(2^x-3)=0$

$2^x = 5 \xrightarrow{\log_2} \log_2 5 = x$

$2^x = 3$

$\log_2 3 = x$

$\Rightarrow \log_5 5 + \log_2 3 = \log_2 15$

$(\log_{21} 3)^2 + \log_{21} 147 \log_{21} 343$

$343 = 3 \times 7 \times 7$
$147 = 3 \times 7 \times 7$

$b^2 \qquad (\log_{21} 7^2 - \log_{21} 3)(\log_{21} 7^2 + \log_{21} 3)$

$(2-b)(2+b)$

$4 - b^2 + 2b^2 = 4$

$\log(x^2-x-1)^{(x-1)^2} + 2\log(1-x)^3 = 5\log_{10} 10 - \log_3 9$

$(x-1)^2 x - (x-1)^3 \Rightarrow -(x-1)^3$

$-(x-1) = 1 \Rightarrow -x+1 = 1$
$-x = 0$

$\log_2(x^2+2x+4) + \log_2(x-2) = 2$

$(x-2)(x^2+2x+4) = x^3-8 \Rightarrow \log_2(x^3-8) = 2 \Rightarrow x^3-8 = 4 \Rightarrow x^3 = 12$

$\log(2-x) - \log\frac{1}{(x-2)^2} = 2$

$\frac{2-x}{\frac{1}{(x-2)^2}} = 2(2-x)(x-2)(x-2)$

$\log -(x-2)^3 = 2 \Rightarrow 10^2 = -(x-2)^3$

$10 = -x+2 \Rightarrow 8 = -x$

$3^{x^2-2} = 81$

$x^2-2 = 4x$

x^2-4x-2

$\Delta = 16 - 4(-2) = 24$

$\log_{\frac{1}{2}} \frac{2^3}{2^{\frac{1}{2}}} \Rightarrow \frac{6}{\frac{1}{2}}$

$\log_3 \frac{x}{\sqrt[3]{2}} \Rightarrow \log_{2^{\frac{1}{3}}} \frac{x}{2^{\frac{1}{3}}}$

$\log_3 x^2 - 1 = 2 \Rightarrow x^2 - 1 = 9$
$x^2 = 10$

$\log_{\frac{1}{2}} 2^3 = \frac{3}{\frac{1}{2}}$

$\log_{\frac{2}{3}} 2 = \frac{5}{8}$

$\log_{\frac{1}{3}} 8 = \frac{15}{21} = \frac{5}{7}$

$3\left(\log_{\frac{2}{3}} 2\right) = \frac{15}{8} \Rightarrow \log_{\frac{2}{3}} 2 = \frac{5}{8}$

$\log_{\frac{1}{3}} 8$

$\log_8 x - \log_8 2 = \log_8 \frac{x}{2}$

$\log_8 \frac{x}{2} = \frac{1}{3}$

$\frac{x}{2} = 2$

$x = 4$

$\log_3 8 + \log_8 8 + \log_8 8 \Rightarrow \log_3 128 \Rightarrow 2\left(\frac{7}{15}\right) + \frac{5}{15} = \frac{19}{15}$

$= \frac{15}{21} - \frac{5}{7}$

نشان اضافی

۱۹,۵

$\log_{۴}^{۳} = ۰/۸$ $\log_{۱۲}^{۶}$ $\log_{۶}^{۱۲} \Rightarrow \log_{۶}^{۴} + \log_{۶}^{۳}$

$\log^{۳}_{۴} + \log^{۲}_{۴} = \log^{۶}_{۴}$

$۰/۸ + ۰/۵ = \frac{۱۳}{۱۰}$

$\frac{۱۰}{۱۳} \log^{۶}_{۳} \Rightarrow \log^{۱}_{۳} + \log^{۲}_{۳}$ (۱/۷۵)

$\frac{۱۰}{۱۳} \times \frac{۱}{۲۶} = \frac{۱}{۱۸} = \frac{۱۳۵}{۱۸}$ $\frac{۲۶}{۱۶} \Rightarrow \frac{۱۶}{۲۶}$

$\frac{۱}{۲} \log^{۳}_{۲} = ۰/۸$

$\log^{۳}_{۲} = \frac{۱۶}{۱۰} \Rightarrow \log^{۲}_{۳} \Rightarrow \frac{۱۰}{۱۶}$

$(a\log ۲)x^۲ + ax + b\log ۲ = ۰$ $x = -۱$

$x = \frac{-c}{a}$ $(\sqrt{۲})^{\frac{۱}{۲}} \frac{b}{a} = ?$

$a\log^{۲} - a + b\log^{۲} = ۰$

$(a+b)\log^{۲} - a = ۰$

$\log ۲ = \frac{a}{a+b} \Rightarrow \frac{۱}{\log^{۲}} = \frac{a+b}{a} \Rightarrow \frac{b}{a} = \frac{۱}{\log^{۲}} - ۱ \Rightarrow ۲^{\frac{۱}{۲\log^{۲}}}$

$۲^{\frac{۱}{\log^{۲}}} = ۱۰$

$۲^{\frac{۱}{۲\log^{۲}}} = \sqrt{۱۰} \Rightarrow \frac{\sqrt{۱۰}}{\sqrt{۲}} = \sqrt{۵}$

$\frac{-b\log^{۲}}{a\log^{۲}} = \frac{-b}{a}$

$b^{\log^{۱}} \quad b \quad b\log^{۲}$