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

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

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

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

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

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

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

$2^x = 3 \quad \log_2 3 = x$

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

$(\log_{21} 3)^2 + \log_{21} 147 \log_{21} 1323$

$1323 = 3 \times 21 \times 21$
$147 = 3 \times 7 \times 7$

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

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

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

$\log(x^{(x-1)^2} - x - 1) + 2\log(1-x)^3 = 3\log_{10} 10^5 - \log_2 9$

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

$-(x-1) = 10 \Rightarrow -x+1 = 10$

$-x = 9$

$\log_4(x^2+2x+5) + \log_4(x-2) = 2 \quad \log \frac{x}{\sqrt{2}} \quad 4^{\frac{1}{2}} \Rightarrow \frac{6}{\frac{1}{2}}$

$(x-2)(x^2+2x+5) = x^3-1 \Rightarrow \log_4 x^3-1 = 2 \Rightarrow x^3-1=16$

$\log(2-x) - \log \frac{1}{(x-2)^2} = 2 \qquad x^3 = 17$

$\frac{2-x}{\frac{1}{(x-2)^2}} = 100 \quad \log -(x-2)^3 = 2 \Rightarrow 10^2 = -(x-2)^3$

$100 = -x+2 \Rightarrow 98 = -x$

$3^{x^2-2} = 81 \quad \log_{\frac{1}{2}} 2^3 = \frac{3}{-1} = -3$

$x^2-2 = 4x \quad \log_4 x-2$

$\Rightarrow \frac{4 \pm \sqrt{16+8}}{2} \quad (2+\sqrt{6})$

$x^2-4x-2 \quad \frac{4-\sqrt{24}}{2} - 2(x-2) > 0$

$16 - f(-2) \quad \pm\sqrt{24} \quad 4+\sqrt{6}-4 \Rightarrow \log_4 \frac{6}{4} \Rightarrow \log_4 4^{\frac{1}{2}} \Rightarrow \frac{1}{2}$

$\log_3 2 = \frac{5}{8} \quad \log_{18} 8 = \frac{15}{21} = \frac{5}{7}$

$3(\log_3 2) = \frac{15}{8} \Rightarrow \log_8 3 = \frac{8}{15} \quad \frac{1}{3}$

$\log_3 8$

$\log_8 3 + \log_8 8 + \log_8 8 \Rightarrow \log_8 11 \Rightarrow 2\left(\frac{8}{15}\right) + \frac{5}{15} = \frac{21}{15}$

$\log_4^3 = 0.8$ $\log_{12}^6$ $\log_6^{12}$ $\Rightarrow \log_6^4 + \log_6^3$

$\log_4^3 + \log_4^2 = \log_4^6$ $\frac{10}{13}$ $\log_3^6 \Rightarrow \log_3^{\frac{1}{2}} + \log_3^2$ $\frac{10}{16}$

$0.8 + 0.5 = \frac{13}{10}$ $\frac{1}{13} \times \frac{16}{26} = \frac{18}{13}$ $\frac{26}{16} \Rightarrow \frac{16}{26}$

$\frac{1}{2}\log_2^3 = 0.1$

$\log_2^3 = \frac{16}{10} \Rightarrow \log_2^{\frac{3}{2}} \Rightarrow \frac{10}{16}$

$(a\log 2)x^2 + ax + b\log 2 = 0$ $x = -1$ $2^{\frac{1}{2}}$ $\frac{b}{a} = ?$

$x = \frac{-c}{a}$

$a\log^2 - a + b\log^2 = 0$ $\frac{-b\log 2}{a\log 2} = \frac{-b}{a}$

$(a+b)\log^2 - a = 0$

$\log 2 = \frac{a}{a+b} \Rightarrow \frac{1}{\log^2} = \frac{a+b}{a} \Rightarrow \frac{b}{a} = \frac{1}{\log 2} - 1 \Rightarrow 2\frac{1}{2\log 2}$

$1 + \frac{b}{a}$ $2^{\frac{1}{\log 2}} = 10$

$2^{\frac{1}{2\log 2}} = \sqrt{10} \Rightarrow \frac{\sqrt{10}}{\sqrt{2}} = \sqrt{5}$

$b^{\log a} \quad b \quad b\log a^2$