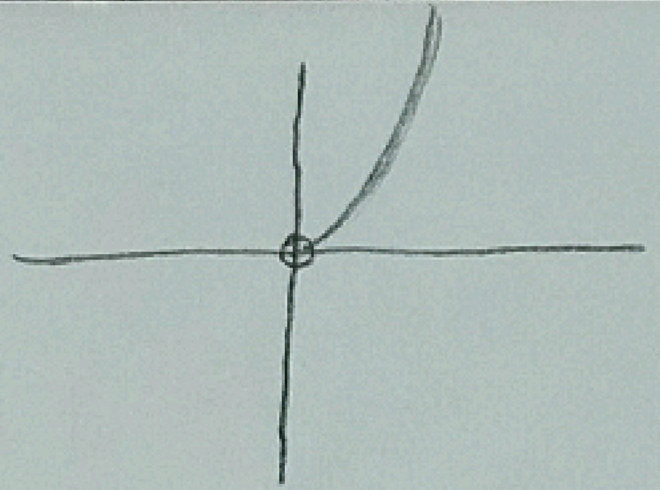
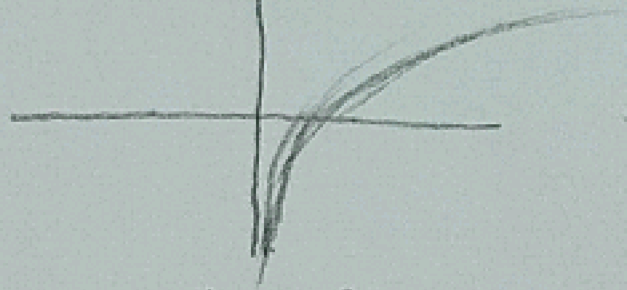
$۹^{\log_{۳} x} \Rightarrow x^{\log_{۳} \cancel{۹}^{\,۲}} \Rightarrow x^{۲}$



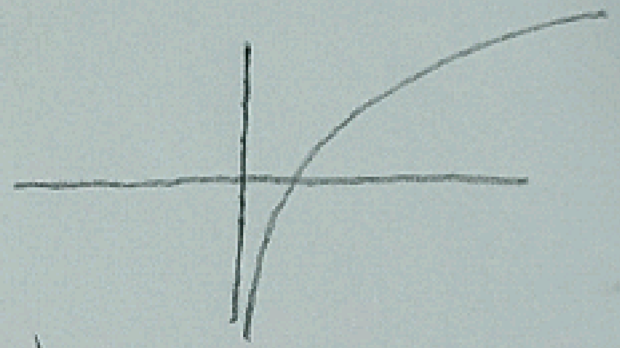
$x > ۰$

$\log x^{۲} \Rightarrow ۲\log x$



$\log x$

$\Rightarrow$



$۲\log x$

شیب ۲ برابر

$$f(x) = -2 + \left(\frac{1}{2}\right)^{ax+b}$$
$$y = x^2 - x$$
$$\left.\right\} \begin{matrix} ۲,۱ \\ ۲,۶ \end{matrix} \quad -2 + \left(\frac{1}{2}\right)^{a+b} = 0 \quad 2^{-a-b} = 2^1$$
$$\cancel{-2} + \left(\frac{1}{2}\right)^{2a+b} = \cancel{2}$$
$$a+b = -1$$
$$2a - b = 2$$
$$-a = 1 \Rightarrow a = -1$$
$$b = 0$$

$$f(2) \Rightarrow -2 + \left(\frac{1}{2}\right)^{-3} = -2 + 8 = 6$$

$$x\left(\frac{8}{9}\right)^h = \frac{1}{6}x \Rightarrow \log_{\frac{8}{9}}$$
$$\Rightarrow h = \underbrace{\log_{\frac{8}{9}} \cancel{\tfrac{1}{6}}\, 6^{-1}}$$
$$-\log_6 \frac{8}{9} \Rightarrow -\frac{1}{h} = \log_6 \frac{8}{9} \Rightarrow \log_6 8 - \cancel{\log_6 9}$$
$$\underbrace{3\log_6 2} - 2\log_6 3$$
$$\cancel{\frac{42}{38} - \frac{48}{38}}$$
$$-\frac{1}{h} = -\frac{6}{38} \Rightarrow h = \frac{38}{\cancel{6}} \times \cancel{60} = 380\ \text{min}$$

$$\frac{\frac{\cancel{10}}{\cancel{24}}}{\frac{14\cancel{0} + 24\cancel{0}}{\cancel{24} \times 14}} = \frac{14}{38}$$

$$\frac{\frac{\cancel{10}}{\cancel{14}}}{\frac{\cancel{14}0 + 240}{24 \times \cancel{14}}} = \frac{24}{38}$$

$$\log_6 2 = \frac{\log_5 2}{\cancel{\log_5 6}}$$
$$\log_5 2 + \log_5 3$$
$$\frac{10}{24} + \frac{10}{14}$$
$$\log_6 3 \quad \frac{\log_5 3}{}$$

$$\left(\frac{7}{8}\right)^w = \frac{1}{7} \Rightarrow \log_{\frac{7}{8}}$$
$$w = \log_{\frac{7}{8}} \frac{1}{7} \qquad -\log_{\frac{7}{8}} 7 \Rightarrow -\frac{1}{w} = \log_7 \frac{7}{8} \Rightarrow \cancel{\log_7 7}^{\,1} - \log_7 8$$
$$w = 8 \Rightarrow 8 \times 7 = 56\ day$$
$$\underbrace{1 - 3(\log_7 2)}$$
$$-\frac{1}{8} <= \cancel{1 - \frac{9}{8}}$$
$$\frac{\log_3 2}{\log_3 7} = \frac{\frac{\cancel{1}}{\cancel{16}}}{\frac{\cancel{10}}{6}} = \frac{3}{8}$$

تعداد اولیه

$$100 \Rightarrow \frac{96}{100} \Rightarrow \cancel{x}\left(\frac{9\cancel{6}}{\cancel{100}}\right)^d = \frac{1}{3}\cancel{x}$$
$$\frac{24}{25} \quad \log_{\frac{24}{25}}$$
$$d = -\log_{\frac{24}{25}} 3$$
$$-\frac{1}{d} = \log_3 \frac{24}{25} \Rightarrow \log_3 24 \quad \underbrace{-\log_3 25}$$
$$-2\log_3 5$$
$$\Downarrow$$
$$-\frac{1}{d} = 2{,}875 \qquad -2\ \frac{70}{48}$$
$$\Rightarrow day = 24$$

$$\cancel{\log_2 8}^{\,1} + 3\log_3 2 \Rightarrow \frac{\frac{3}{\cancel{10}}}{\frac{48}{\cancel{100}}} = \frac{30}{48}$$
$$\frac{\log_{10} 5}{\log_{10} 3} = \frac{\frac{100-30}{\cancel{100}}}{\frac{48}{\cancel{100}}} = \frac{70}{48}$$

نوژان امامی

$(a+c)b = ?$ $\qquad y = 1 - \log_c (ax-b)$ $\qquad c = \frac{1}{2}$, $b = -2$

$b + c = -\frac{3}{2}$ $\qquad 2 = 1 - \log_c -b$

$-\frac{1}{c} + c = -\frac{3}{2}$ $\qquad \log_c -b = -1 \Rightarrow \frac{1}{c} = -b$

$1 - \log_{\frac{1}{2}} -\frac{3}{2} - b = 0$

$1 = \log_{\frac{1}{2}} -\frac{3}{2}a + 2$

$\frac{1}{2} = -\frac{3}{2}a + 2$

$-\frac{3}{2} = -\frac{3}{2}a \Rightarrow a = 1$

$\frac{c^2 - 1}{\cancel{c}} = -\frac{3}{2}c \Rightarrow c^2 + \frac{3}{2}c - 1 = 0$

$\cancel{2}c^2 + 3c - \cancel{2}^{4}$

$(c-1)(c+4)$ $\quad 1, -4 \Rightarrow \frac{1}{2}, -2$ ~~غ ق ق~~

$(\cancel{1+\frac{1}{2}}^{\frac{3}{2}}) - 2 = -2$

$1 + c \times 3^{a+bx} = f(x)$ $\qquad 1 + c \times 3^{a+b} = 0$ $\qquad 3^{a+b} = \frac{-1}{c}$

$f(-1)$

$\cancel{2} + c \times 3^{a} = \frac{\cancel{2}}{3}$

$b = 1$ $\qquad c \times 3^{a} = -\frac{1}{3}$

$1 + \underbrace{\underbrace{c \times 3^{a}}_{-\frac{1}{3}} \times 3^{x}}_{-\frac{1}{3} \times 3^{-1}}_{-\frac{1}{9}} \Rightarrow \frac{8}{9}$

$1 + \underbrace{c \times 3^{a}}_{-\frac{1}{3}} \times 3^{b}$

$-\frac{1}{3} \times 3^{b} = -1$

$-3^{-1} \times 3^{b} = -3^{0}$

$3^{-1+b} = 3^{0}$

$b = +1$

$y = c + \log_5 (ax+b)$ $\qquad \frac{a}{b}$

$c + \log_5 b = 2$ $\qquad 5^{(2-c)} = b$ $\qquad 5^2 \times 5^{-c} = b$

$c + \log_5 (2.4a + b) = 0$ $\qquad 5^{-c} = 2.4a + b$

$\frac{-10 \times \cancel{5^{-c}}}{5^2 \times \cancel{5^{-c}}} = \frac{2}{5}$

$5^{-c} = 2.4a + (5^2 \times 5^{-c}) \Rightarrow 5^{-c} - (5^2 \times 5^{-c}) = 2.4a$

$5^{-c}(1 - \cancel{25}) = 2.4a$

$-10 \times 5^{-c} = a$

$\log_4 (|x^2 - 2| - x) > 0$

$|x^2 - 2| > x$ $\qquad \cup \; x^2 - 2 > x \Rightarrow x^2 - x - 2 \quad (x+1)(x-2)$

$x^2 - 2 < -x \Rightarrow x^2 + x - 2 \quad (x-1)(x+2)$

	-1		2	
+		-		+

	-2		1	
+		-		+

$(-\infty \; -1) \cup (-1 \; 1) \cup (2 \; +\infty)$

$f(x) = 2 + 2^{b-ax}$

$g(x) = -x^2 - 3x + 8$ } در برابر $\qquad 2^{b-a}$

$+\cancel{2} = \cancel{-1 - 3 + 8}^{4}$

$2^{b-a} = 2^1$

$\cancel{2} + 2^{b+a} = \cancel{10}^{8}$

$f^{-1}(10) = -1$ $\qquad 2b - a = 4 - 1 = 3$

$b - a = 1$

$b + a = 3$

$2b = 4$

$b = 2$

$a = 1$