

④ $\log(x-2) - \log \frac{1}{(x-4)^2} = \mu \rightarrow \log(x-2) - \log \frac{1}{(x-4)^2} = \mu$
 $\log \frac{(x-2)^{\mu+1}}{(x-4)^{2\mu}} = \mu$
 $\log \frac{(x-2)^{\mu+1}}{(x-4)^{2\mu}} = \mu \rightarrow \log(x-2)^{\mu+1} = \log(x-4)^{2\mu} + \mu$
 $\log \frac{(x-2)^{\mu+1}}{(x-4)^{2\mu}} = \mu \rightarrow \log(x-2)^{\mu+1} = \log(x-4)^{2\mu} + \mu$

⑤ $\mu^{x^2-2} = \mu^x \rightarrow \mu^{x^2-2} = \mu^x \rightarrow x^2-2 = x$
 $x^2 - x - 2 = 0$
 $(x-2)(x+1) = 0$
 $x = 2$ or $x = -1$
 $\log \frac{(x-2)^{\mu+1}}{(x-4)^{2\mu}} = \mu$
 $\log \frac{x^2 - x - 2}{x} = \log \frac{x+1}{x}$
 $\frac{x^2 - x - 2}{x} = \frac{x+1}{x}$
 $x^2 - x - 2 = x + 1$
 $x^2 - 2x - 3 = 0$
 $(x-3)(x+1) = 0$
 $x = 3$ or $x = -1$

⑥ $\log \mu^x = \frac{a}{n}$
 $\log \frac{a}{n} = ?$
 $\log \frac{a}{n} = \frac{\log a}{\log n} = \frac{\log a}{\log \mu^x} = \frac{\log a}{x \log \mu} = \frac{1}{x} \frac{\log a}{\log \mu}$
 $\frac{1}{x} \frac{\log a}{\log \mu} = \frac{a}{n}$
 $\frac{\log a}{\log \mu} = \frac{ax}{n}$

⑦ $\log \frac{\mu}{x} = \frac{a}{n}$
 $\log \frac{\mu}{x} = \frac{a}{n} \rightarrow \log \mu = \frac{ax}{n} + \log x$
 $\log \frac{\mu}{x} = \frac{a}{n} \rightarrow \frac{\log \mu}{\log x} = \frac{a}{n} \rightarrow \log \mu = \frac{ax}{n} + \log x$
 $\log \frac{\mu}{x} = \frac{a}{n} \rightarrow \frac{\log \mu}{\log x} = \frac{a}{n} \rightarrow \frac{1 + \log x}{\log x} = \frac{1}{n}$

⑧ $(a \log \mu) x^a + a x + b \log \mu = 0$
 $(\sqrt{\mu})^{\frac{b}{a}} = ?$
 $\frac{a + b}{a} \log \mu = 1$
 $(1 + \frac{b}{a}) \log \mu = 1$
 $\log \mu (1 + \frac{b}{a}) = 1$
 $\log \mu (1 + \frac{b}{a}) = 1 \rightarrow \log \mu^{\frac{a+b}{a}} = 1$
 $\mu^{\frac{a+b}{a}} = 10$
 $(\sqrt{\mu})^{\frac{b}{a}} = \frac{10}{\mu^{\frac{a}{a}}}$
 $(\sqrt{\mu})^{\frac{b}{a}} = \frac{10}{\mu}$
 $(\mu^{\frac{1}{2}})^{\frac{b}{a}} = \frac{10}{\mu}$
 $\mu^{\frac{b}{2a}} = \frac{10}{\mu}$
 $\mu^{\frac{b}{2a} + 1} = 10$
 $\mu^{\frac{b+2a}{2a}} = 10$
 $\mu^{\frac{b+2a}{2a}} = 10$