

1.21  
L3

$$\log_4 x + \log_x 2 - \log_4 \sqrt{x} \leq 1$$

$$\frac{1}{2} \log_2 x + \frac{1}{\log_2 x} - \frac{1}{2} \log_2 x^{0.5} \leq 1$$

$$\frac{1}{2} \log_2 x + \frac{1}{\log_2 x} - \frac{1}{4} \log_2 x \leq 1$$

$$\frac{1}{4} \log_2 x + \frac{1}{\log_2 x} \leq 1$$

$$\log_2 x = t \quad (n.o)$$

$$\frac{1}{4} t + \frac{1}{t} \leq 1$$

$$0 \geq \frac{t^2 - 4t + 4}{t} = \frac{(t-2)^2}{t}$$

$$\begin{array}{c} + \quad + \\ - \quad 0 \quad 2 \end{array}$$

$$t = 2$$

$$t < 0$$

$$\log_2 x = 2 \rightarrow x = 4$$

$$\log_2 x < 0 \rightarrow x < 1$$

$$\boxed{0 < x < 1, x = 4} \quad \text{:abs'ol}$$

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|1 ≠ x > 2|

1.21  
24

$$2(16 \log_9 x + 1 - 2 \log_3 \sqrt{x}) + 15 \cdot 4^{2 \log_2 x} \leq 15 \log_{15} 5\sqrt{5}$$

$$2(16 \log_3 x + 1 - 2 \log_3 x) + 15 \cdot 4^{2 \log_2 x} \leq 45$$

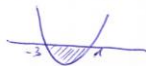
$$2(2 \log_3 x - 2 \log_3 x) + 15 \cdot 4^{2 \log_2 x} \leq 45$$

$$2 \cdot 15 \cdot 2^{2 \log_2 x} + 15 \cdot 2^{4 \log_2 x} \leq 45$$

$$30 \cdot 2^{2 \log_2 x} + 15 \cdot 2^{4 \log_2 x} \leq 45 \quad /:15$$

$$2 \cdot 2^{2 \log_2 x} + 2^{4 \log_2 x} \leq 3 \quad t = 2^{2 \log_2 x} \quad (n.o)$$

$$t^2 + 2t - 3 \leq 0$$



$$-3 \leq t \leq 1$$

$$-3 \leq 2^{2 \log_2 x} \leq 1$$

$$0 \leq 2^{2 \log_2 x} \leq 1$$

$$\downarrow$$

$$x \leq 1$$

$$\downarrow$$

$$2^{2 \log_2 x} \leq 2^0$$

$$2 \log_2 x \leq 0$$

$$\log_2 x \leq 0$$

$$\boxed{x \leq 1}$$

$$\boxed{0 < x \leq 1} \quad \text{:abs'ol}$$

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x > 0