2.

$$\frac{2}{\log_{x-1} 2} - (\log_2 |x^2 - 4|) + 2 = 0$$

$$\frac{2}{\log_{x-1} 2} + 2 = \log_2 |x^2 - 4|$$

由 log 的限制條件
x-1≠1 , x-1>0 , $|x^2 - 4|$>0
x≠2 , x>1, x≠−2

討論絕對值

(i) $(x^2 - 4)$>0

$$\frac{2}{\log_{x-1} 2} + 2 = \log_2 (x^2 - 4)$$

$\log_2 (x - 1)^2 + \log_2 2^2 = \log_2 (x^2 - 4)$
$4(x - 1)^2 = (x^2 - 4)$
$4x^2 - 8x + 4 = x^2 - 4$
$3x^2 - 8x + 8 = 0$
D=$(-8)^2 - 4 \times 3 \times 8$<0

x 無實數解

 (ii) $(x^2 - 4)$<0
$\log_2 (x - 1)^2 + \log_2 2^2 = \log_2 -(x^2 - 4)$
$4x^2 - 8x + 4 = -x^2 + 4$
$5x^2 - 8x = 0$

x=0(不合)or x=$\frac{8}{5}$