94. $\log x - 1 > \dfrac{2}{\log x}$

Pongo: $\log x = t \quad \Rightarrow \quad t - 1 - \dfrac{2}{t} > 0 \quad \Rightarrow \quad \dfrac{t^2 - t - 2}{t} > 0$

$-1 < t < 0 \quad \vee \quad t > 2 \quad \Rightarrow \quad \dfrac{1}{10} < x < 1 \quad \vee \quad x > 100$

$\begin{cases} \dfrac{1}{10} < x < 1 \quad \vee \quad x > 100 \\ x > 0 \end{cases} \quad \Rightarrow \quad \boxed{\dfrac{1}{10} < x < 1 \quad \vee \quad x > 100}$

95. $\dfrac{\log(x - 3) - 1}{1 + \log x} < 0$

$N > 0 : \log(x - 3) > 1 \quad \Rightarrow \quad x - 3 > 10 \quad \Rightarrow \quad x > 13$

$D > 0 : \log x > -1 \quad \Rightarrow \quad x > \dfrac{1}{10}$

$\begin{cases} \dfrac{1}{10} < x < 13 \\ x > 0 \\ x - 3 > 0 \end{cases} \quad \Rightarrow \quad \begin{cases} \dfrac{1}{10} < x < 13 \\ x > 0 \\ x > 3 \end{cases} \quad \Rightarrow \quad \boxed{3 < x < 13}$

96. $\log_2^2 x - 6\log_2 x + 8 > 0$

Pongo: $\log_2 x = t \quad \Rightarrow \quad t^2 - 6t + 8 > 0 \quad \Rightarrow \quad t_{1,2} = \dfrac{3 \pm \sqrt{1}}{1} = \begin{cases} 4 \\ 2 \end{cases}$

$t < 2 \quad \vee \quad t > 4 \quad \Rightarrow \quad \log_2 x < 2 \quad \vee \quad \log_2 x > 4$

$\begin{cases} x > 0 \\ x < 4 \quad \vee \quad x > 16 \end{cases} \quad \Rightarrow \quad \boxed{0 < x < 4 \quad \vee \quad x > 16}$

97. $\log_{1/4}(x^2 - 7x + 12) - \log_{1/4}(9 - x^2) > 0$

$\log_{1/4}(x^2 - 7x + 12) > \log_{1/4}(9 - x^2)$

$$\begin{cases} x^2 - 7x + 12 > 0 \\ 9 - x^2 > 0 \\ x^2 - 7x + 12 < 9 - x^2 \end{cases} \Rightarrow \begin{cases} x < 3 \ \lor \ x > 4 \\ -3 < x < 3 \\ 2x^2 - 7x + 3 < 0 \end{cases} \Rightarrow \begin{cases} x < 3 \ \lor \ x > 4 \\ -3 < x < 3 \\ \dfrac{1}{2} < x < 3 \end{cases} \Rightarrow$$

$\dfrac{1}{2} < x < 3$

98. $\log_3^2 x - 4\log_3 x + 3 < 0$

Pongo: $\log_3 x = t \quad \Rightarrow \quad t^2 - 4t + 3 < 0 \quad \Rightarrow \quad 1 < t < 3 \quad \Rightarrow$

$1 < \log_3 x < 3 \quad \Rightarrow \quad 3 < x < 27$

$$\begin{cases} 3 < x < 27 \\ x > 0 \end{cases} \Rightarrow \quad 3 < x < 27$$