70. $\left|\ln|x+2|-1\right| \geq 4$

$$\begin{cases} x+2 \neq 0 \\ \ln|x+2|-1 \leq -4 \ \vee \ \ln|x+2|-1 \geq 4 \end{cases} \Rightarrow$$

$$\begin{cases} x \neq -2 \\ \ln|x+2| \leq -3 \ \vee \ \ln|x+2| \geq 5 \end{cases} \Rightarrow \begin{cases} x \neq -2 \\ |x+2| \leq e^{-3} \ \vee \ |x+2| \geq e^{5} \end{cases} \Rightarrow$$

$$\begin{cases} x \neq -2 \\ -e^{-3} \leq x+2 \leq e^{-3} \ \vee \ x+2 \leq -e^{5} \ \vee \ x+2 \geq e^{5} \end{cases} \Rightarrow$$

$$\begin{cases} x \neq -2 \\ -e^{-3}-2 \leq x \leq e^{-3}-2 \ \vee \ x \leq -2-e^{5} \ \vee \ x \geq e^{5}-2 \end{cases} \Rightarrow$$

$$x \leq -2-e^{5} \ \vee \ -e^{-3}-2 \leq x < 2 \ \vee \ 2 < x \leq e^{-3}-2 \ \vee \ x \geq e^{5}-2$$

71. $\log_2\left(4-\log_{\frac{1}{2}} x\right) \leq \log_{\frac{1}{4}} 16$

$$\log_2\left(4-\log_{\frac{1}{2}} x\right) \leq \frac{\log_2 16}{\log_2 \frac{1}{4}} \Rightarrow \log_2\left(4-\log_{\frac{1}{2}} x\right) \leq \frac{4}{-2}$$

$$\log_2\left(4-\log_{\frac{1}{2}} x\right) \leq -2 \Rightarrow 4-\log_{\frac{1}{2}} x \leq \frac{1}{4} \Rightarrow \log_{\frac{1}{2}} x \geq \frac{15}{4}$$

$$\begin{cases} 4-\log_{\frac{1}{2}} x > 0 \\ x > 0 \\ \log_{\frac{1}{2}} x \geq \frac{15}{4} \end{cases} \Rightarrow \begin{cases} \log_{\frac{1}{2}} x < 4 \\ x > 0 \\ x \leq \left(\frac{1}{2}\right)^{\frac{15}{4}} \end{cases} \Rightarrow \begin{cases} x > \frac{1}{16} \\ x > 0 \\ x \leq \frac{1}{8}\sqrt[4]{\frac{1}{8}} \end{cases}$$

$$\frac{1}{16} < x \leq \frac{1}{8}\sqrt[4]{\frac{1}{8}}$$

72. $\log_{\frac{1}{3}}^{3}(2-|x|) - \log_{\frac{1}{3}}(2-|x|) \leq 0$

c.a.: $2-|x| > 0 \Rightarrow |x| < 2 \Rightarrow -2 < x < 2$

Pongo: $\log_{\frac{1}{3}}(2-|x|) = t \Rightarrow t^3 - t \leq 0$

$$t(t^2-1) \leq 0 \Rightarrow t(t-1)(t+1) \leq 0 \Rightarrow t \leq -1 \ \vee \ 0 \leq t \leq 1 \Rightarrow$$

$$\log_{\frac{1}{3}}(2-|x|) \leq -1 \ \vee \ 0 \leq \log_{\frac{1}{3}}(2-|x|) \leq 1 \Rightarrow \frac{1}{3} \leq 2-|x| \leq 1 \ \vee \ 2-|x| \geq 3$$

$$-\frac{5}{3} \leq -|x| \leq -1 \ \vee \ -|x| \geq 1 \Rightarrow |x| \leq -1 \ \vee \ 1 \leq |x| \leq \frac{5}{3} \Rightarrow$$

$$\begin{cases} |x| \le \frac{5}{3} \\ |x| \ge 1 \end{cases} \Rightarrow \begin{cases} -\frac{5}{3} \le x \le \frac{5}{3} \\ x \le -1 \ \vee \ x \ge 1 \end{cases} \Rightarrow -\frac{5}{3} \le x \le -1 \ \vee \ 1 \le x \le \frac{5}{3}$$

$$\begin{cases} -2 < x < 2 \\ -\frac{5}{3} \le x \le -1 \ \vee \ 1 \le x \le \frac{5}{3} \end{cases} \Rightarrow \boxed{-\frac{5}{3} \le x \le -1 \ \vee \ 1 \le x \le \frac{5}{3}}$$

73. $\log(2x-2) > \log(x+1)$

$$\begin{cases} 2x-2>0 \\ x+1>0 \\ 2x-2>x+1 \end{cases} \Rightarrow \begin{cases} x>1 \\ x>-1 \\ x>3 \end{cases} \Rightarrow \boxed{x>3}$$

74. $\log_{1/2}(2x-1) > \log_{1/2}(3x+2)$

$$\begin{cases} 2x-1>0 \\ 3x+2>0 \\ 2x-1>3x+2 \end{cases} \Rightarrow \begin{cases} x>\frac{1}{2} \\ x>-\frac{2}{3} \\ x>-3 \end{cases} \Rightarrow \boxed{x>\frac{1}{2}}$$

75. $2\log_2 x > \log_2 4(x-1)$

$$\begin{cases} x>0 \\ x-1>0 \\ x^2>4x-4 \end{cases} \Rightarrow \begin{cases} x>0 \\ x>1 \\ x\neq 2 \end{cases} \Rightarrow \boxed{x>1 \ \wedge \ x\neq 2}$$

76. $\log_{1/2}(4x-1)+\log_{1/2}(1-x) > \log_{1/2}(3x-1)+\log_{1/2}(1+x)$

$\log_{1/2}(4x-1)(1-x) > \log_{1/2}(3x-1)(1+x)$

$$\begin{cases} 4x-1>0 \\ 1-x>0 \\ 3x-1>0 \\ 1+x>0 \\ 4x-4x^2-1+x<3x+3x^2-1-x \end{cases} \Rightarrow \begin{cases} x>\frac{1}{4} \\ x<1 \\ x>\frac{1}{3} \\ x>-1 \\ x<0 \ \vee \ x>\frac{3}{7} \end{cases} \Rightarrow \boxed{\frac{3}{7}<x<1}$$

77. $\log_5 (x-16) + \log_5 x > \log_5 105$

$\log_5 x(x-16) > \log_5 105$

$$\begin{cases} x-16>0 \\ x>0 \\ x^2-16x>105 \end{cases} \Rightarrow \begin{cases} x>16 \\ x<0 \\ x<-5 \ \vee \ x>21 \end{cases} \Rightarrow \boxed{x>21}$$

78. $\log_{1/2} (x+3) + \log_{1/2} (x-5) > 2\log_{1/2} x$

$\log_{1/2} (x+3)(x-5) > \log_{1/2} x^2$

$$\begin{cases} x+3>0 \\ x-5>0 \\ x>0 \\ x^2-5x+3x-15>x^2 \end{cases} \Rightarrow \begin{cases} x>-3 \\ x>5 \\ x>0 \\ x>-\frac{15}{2} \end{cases} \Rightarrow \boxed{x>5}$$

79. $\log_{1/2} (x+1) > 0$

$$\begin{cases} x+1>0 \\ x+1<1 \end{cases} \Rightarrow \begin{cases} x>-1 \\ x<0 \end{cases} \Rightarrow \boxed{-1<x<0}$$

80. $\log\sqrt{7x+5} + \log\sqrt{2x+7} < 1+\log\frac{9}{2}$

$\frac{1}{2}\log(7x+5) + \frac{1}{2}\log(2x+7) < \log 10 + \log\frac{9}{2}$

$\frac{1}{2}\log(7x+5)(2x+7) < \log 45 \quad \Rightarrow \quad \log(14x^2+59x+35) < \log 45^2$

$$\begin{cases} 7x+5>0 \\ 2x+7>0 \\ 14x^2+59x-1990<0 \end{cases} \Rightarrow \begin{cases} x>-\frac{5}{7} \\ x>-\frac{7}{2} \\ -\frac{199}{14}<x<10 \end{cases} \Rightarrow \boxed{-\frac{5}{7}<x<10}$$

81. $\log_{3/5} (2x-5) + \log_{3/5} (4-x) > 2\log_{3/5} (x-2)$

$\log_{3/5} (2x-5)(4-x) > 2\log_{3/5} (x-2)$

$$\begin{cases} 2x-5>0 \\ 4-x>0 \\ x-2>0 \\ 8x-2x^2-20+5x<x^2-4x+4 \end{cases} \Rightarrow \begin{cases} x>\frac{5}{2} \\ x<4 \\ x>2 \\ x<\frac{8}{3} \ \vee \ x>3 \end{cases} \Rightarrow \boxed{\frac{5}{2}<x<\frac{8}{3} \ \vee \ 3<x<4}$$