

1.56  
3

$$2 \log_x 10 + \log_{10x} 10 + 3 \log_{100x} 10 > 0$$

$$\frac{2}{\log_{10} x} + \frac{1}{\log_{10} 10x} + \frac{3}{\log_{10} 100x} > 0$$

$$\frac{2}{\log_{10} x} + \frac{1}{\log_{10} 10 + \log_{10} x} + \frac{3}{\log_{10} 100 + \log_{10} x} > 0$$

$$\frac{2}{t} + \frac{1}{1+t} + \frac{3}{2+t} > 0$$

$$t = \log_{10} x \quad \text{1mg}$$

$$\frac{2(1+t)(2+t) + t(2+t) + 3t(1+t)}{t(1+t)(2+t)} > 0$$

$$0 < \frac{2t^2 + 6t + 4 + t^2 + 2t + 3t + 3t^2}{t(1+t)(2+t)} = \frac{6t^2 + 11t + 4}{t(1+t)(2+t)} = \frac{(3t+4)(2t+1)}{t(1+t)(2+t)}$$



$$t \neq 0 \rightarrow \log_{10} x > 0$$
$$-1 < t < -\frac{1}{2} \rightarrow -1 < \log_{10} x < -\frac{1}{2}$$
$$-2 < t < -\frac{1}{3} \rightarrow -2 < \log_{10} x < -\frac{1}{3}$$

$$x > 1$$

$$\frac{1}{10} < x < \frac{1}{110}$$

$$\frac{1}{100} < x < \frac{1}{\sqrt[3]{10^9}}$$