# Урок 2, задание 3

1) $2^x = 256 \rightarrow \log_2 256 \rightarrow \log_2 2^8 \rightarrow \underline{x = 8}$

2) $2^x = 300 \rightarrow \log_2 300 \rightarrow \underline{x = 8{,}23}$

3) $\log_8 2^{8x-4} = 9$

$(8x-4)\log_8 2 = 4 \rightarrow 8x-4 = \frac{4}{\log_8 2} \rightarrow 8x-4 = \frac{4}{\log_{2^3} 2}$

$\rightarrow 8x-4 = \frac{4}{\frac{1}{3}\log_2 2} \rightarrow 8x-4 = 12 \rightarrow 8x = 16 \rightarrow \underline{x = 2}$

4) $3^{\log_9(5x-5)} = 5$

$(5x-5)^{\log_9 3} \rightarrow (5x-5)^{\frac{1}{2}} = 5 \rightarrow 5x-5 = 25 \rightarrow \underline{x = 6}$

5) $x^{\log_3 x+1} = 9$

$\log_3 x \cdot \log_3 x+1 = \log_3 3^2$

$x(x+1) = 9 \rightarrow x^2 + x - 9 = 0$

$x_1 = -1 + \frac{\sqrt{37}}{2} \sim 2$

$x_2 = -1 - \frac{\sqrt{37}}{2} \sim -4$