$$(х+5)^{log\_{9}(х+5)}=9$$

ОДЗ:

$$\left\{\begin{array}{c}х+5>0\\х+5\ne 1\end{array}\right.$$

$$\left\{\begin{array}{c}х>-5\\х\ne -4\end{array}\right.$$

$$(х+5)^{log\_{9}(х+5)}=9$$

$$log\_{9}(х+5)=log\_{(х+5)}9$$

$$log\_{9}(х+5)=\frac{log\_{9}9}{log\_{9}(х+5)}$$

$$log\_{9}(х+5)=\frac{1}{log\_{9}(х+5)}$$

$$log\_{9}(х+5)-\frac{1}{log\_{9}\left(х+5\right)}=0$$

$$\frac{log^{2}\_{9}(х+5)-1}{log\_{9}\left(х+5\right)}=0$$

$$\frac{log^{2}\_{9}\left(х+5\right)-1}{log\_{9}\left(х+5\right)}=0$$

$$\left\{\begin{array}{c}log^{2}\_{9}\left(х+5\right)-1=0\\log\_{9}\left(х+5\right)\ne 0\end{array}\right.$$

$$\left\{\begin{array}{c}log^{2}\_{9}\left(х+5\right)=1\\log\_{9}\left(х+5\right)\ne 0\end{array}\right.$$

$$\left\{\begin{array}{c}log\_{9}\left(х+5\right)=\pm 1\\log\_{9}\left(х+5\right)\ne 0\end{array}\right.$$

$\left\{\begin{array}{c}log\_{9}\left(х+5\right)=1\\log\_{9}\left(х+5\right)\ne 0\end{array}\right.$ $\left\{\begin{array}{c}log\_{9}\left(х+5\right)=-1\\log\_{9}\left(х+5\right)\ne 0\end{array}\right.$

$\left\{\begin{array}{c}х+5=9^{1}\\х+5\ne 9^{0}\end{array}\right.$ $\left\{\begin{array}{c}х+5=9^{-1}\\х+5\ne 9^{0}\end{array}\right.$

$\left\{\begin{array}{c}х+5=9\\х+5\ne 1\end{array}\right.$ $\left\{\begin{array}{c}х+5=\frac{1}{9}\\х+5\ne 1\end{array}\right.$

$\left\{\begin{array}{c}х=4\\х\ne -4\end{array}\right.$ $\left\{\begin{array}{c}х=-4\frac{8}{9}\\х\ne -4\end{array}\right.$

Ответ:4; $-4\frac{8}{9}$