$$= \frac{1 - \frac{1}{3}}{\frac{2^2}{3^{2/3} \times 2^{1/3}}}$$

$$= \frac{2}{3} \times \frac{3^{2/3} \times 2^{1/3}}{2^2}$$

$$= \frac{1}{2^{\left(-\frac{1}{3}\right)} \times 3^{\left(1-\frac{2}{3}\right)}}$$

$$= \frac{1}{(2)^{2/3} \times (3)^{1/3}}$$

$$= \frac{1}{2} \frac{1 \times 2}{(2)^{2/3} \times (3)^{1/3}}$$

$$= \frac{1}{2} \times \left(\frac{2}{3}\right)^{1/3}.$$

So, $x = -\left(\frac{2}{3}\right)^{1/3}$ and $y = \frac{1}{2} \times \left(\frac{2}{3}\right)^{1/3}$ are the solutions supposedly.

Check :- These solutions satisfy the const.

$$x + 2y = 0$$

$$-\left(\frac{2}{3}\right)^{1/3} + 2 \times \frac{1}{2} \times \left(\frac{2}{3}\right)^{1/3} = 0$$

However, $x = -\left(\frac{2}{3}\right)^{1/3}$ which is -ve and in $f(x,y)$, $\log(x)$ is not defined for this value of $x$. (negative values)

So, No soln exists for this function.