

Calculator  $\log_2 6$

$$3^2 = 9$$

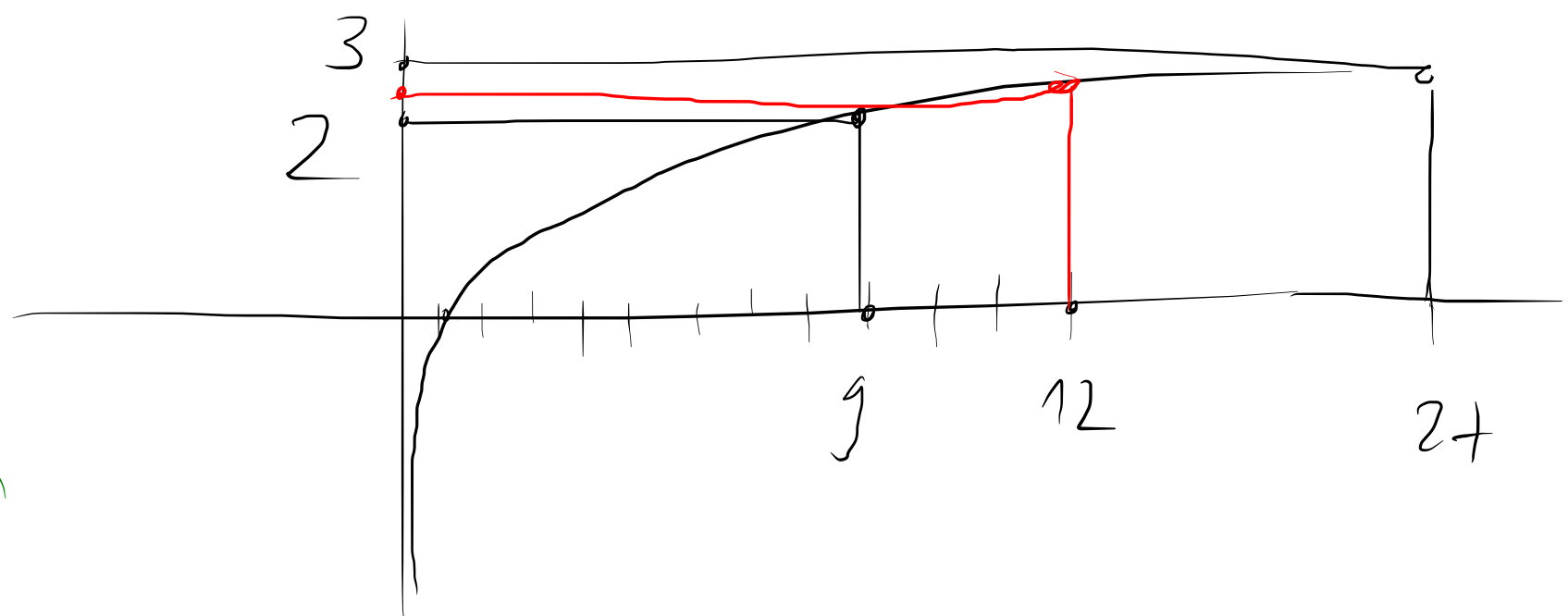
$$3^3 = 27$$

$$2 < \log_3 12 < 3$$

$$\log_3 12 = \frac{\ln 12}{\ln 3} = \frac{\log 12}{\log 3}$$

$$\approx \frac{2,4849}{1,0986} \approx 2,2618$$

$$\approx \frac{1,079}{0,477} \approx 2,2618$$



77 30:

$e^x$   
LN

$10^x$   
LOG

base 2.7182...

base 10

$$\Leftrightarrow \log_2 b = \frac{\log_c b}{\log_c 2} = \frac{\ln b}{\ln 2} = \frac{\log b}{\log 2}$$

$$\Leftrightarrow \log_2 b \cdot \log_c 2 = \log_c b$$

$$\Leftrightarrow c^{(\log_c 2)^x \cdot (\log_2 b)^y} = c^{\log_c b}$$

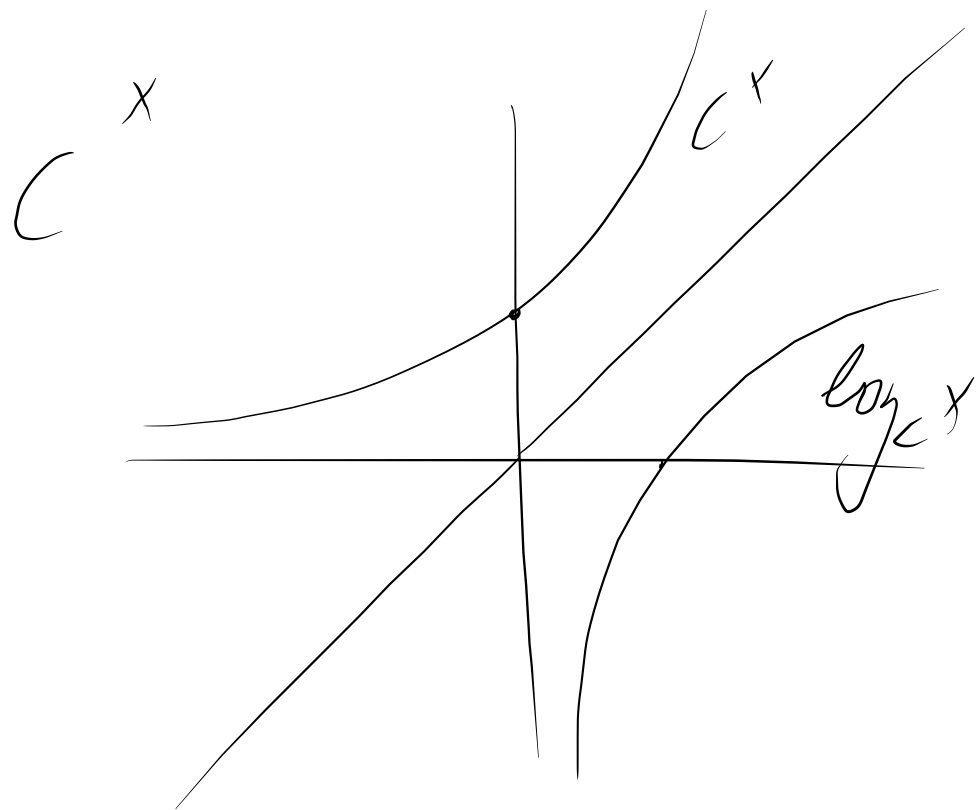
$$c^{x \cdot y} = (c^x)^y$$

$$\Leftrightarrow (c^{\log_c 2})^{(\log_2 b)^y} = b$$

$$\Leftrightarrow 2^{\log_2 b} = b$$

$$\Leftrightarrow b = b \quad \checkmark$$

$$\frac{\ln b}{\ln 2} = \frac{\log b}{\log 2}$$



$$\log_c c^x = x$$

$$c^{\log_c x} = x$$

4.2.14    2'    4.2.33