

Taylor series

Smashing
Aleph1: the stack
for fun and
profit

$$e^x = \sum_{n=0}^{\infty} \frac{x^n}{n!} = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \dots$$

$$1 \xrightarrow{+} \boxed{}$$

$x \quad x$

$$x \xrightarrow{+} \frac{x}{2!}$$

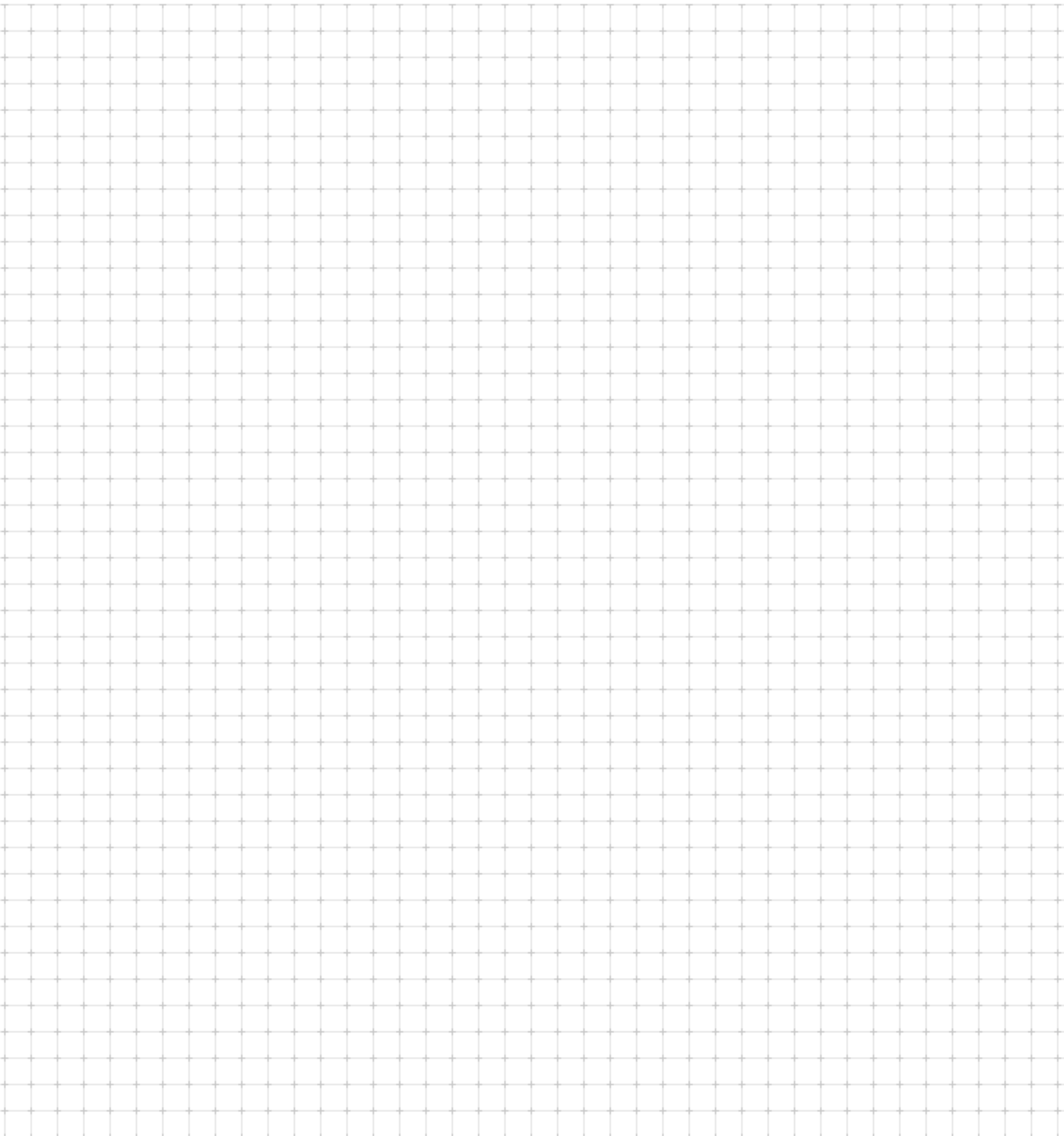
$$x \xrightarrow{+} \frac{x}{3}$$

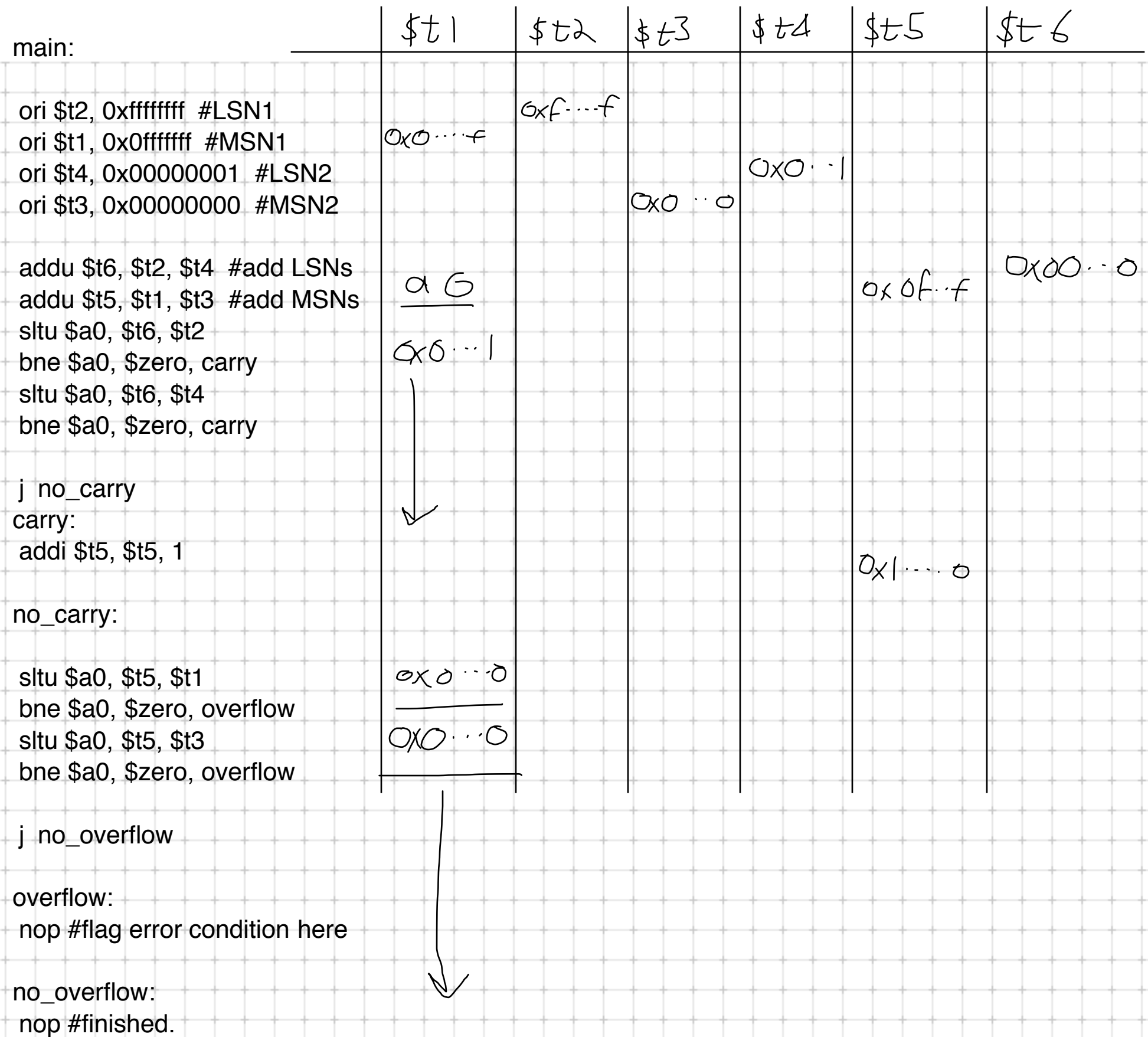
$$\log(1-x) = - \sum_{n=1}^{\infty} \frac{x^n}{n} \quad \forall -1 < x < 1$$

$$\log(1+x) = \sum_{n=1}^{\infty} (-1)^{n+1} \frac{x^n}{n} \quad \forall -1 < x < 1$$

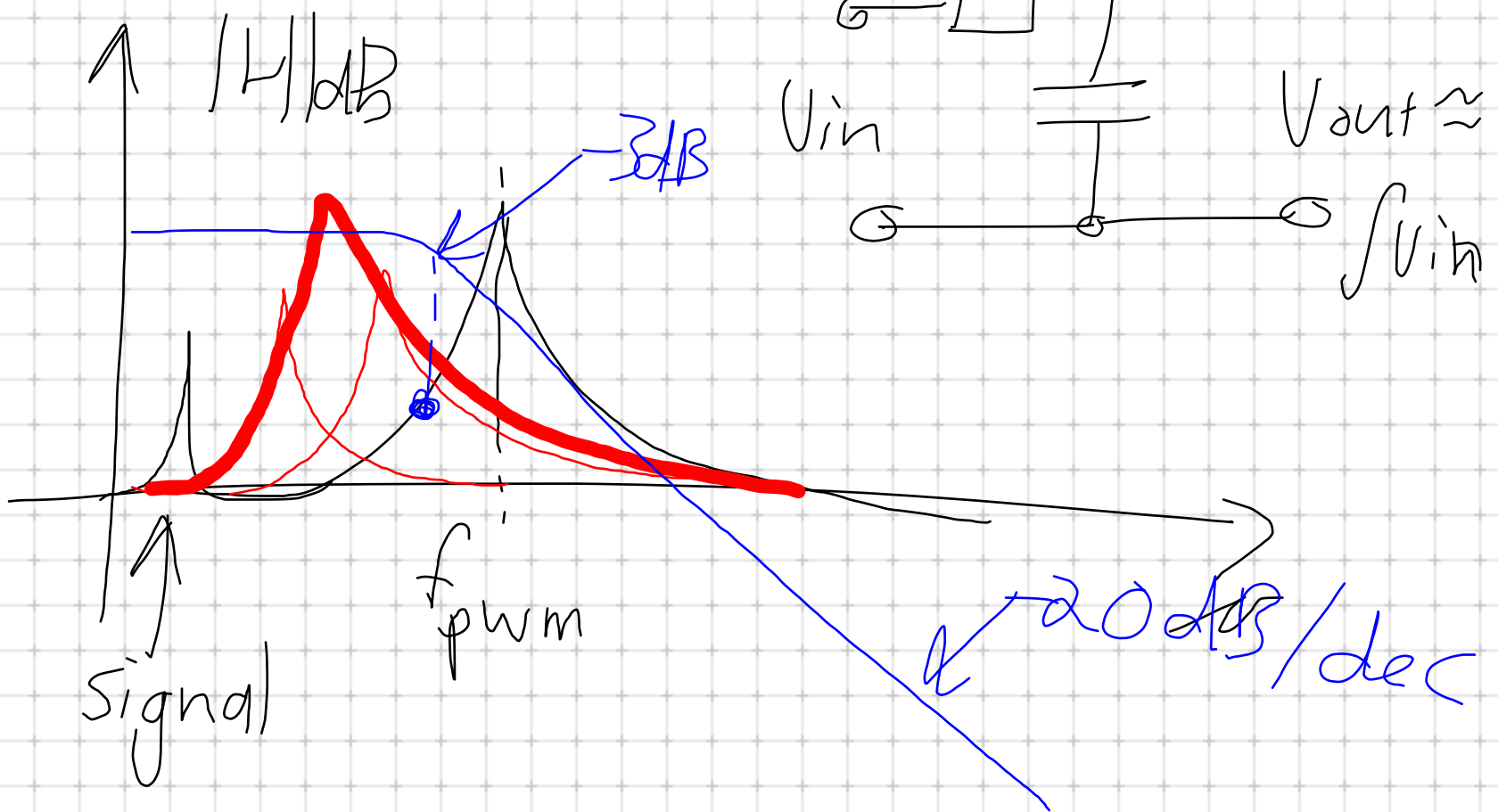
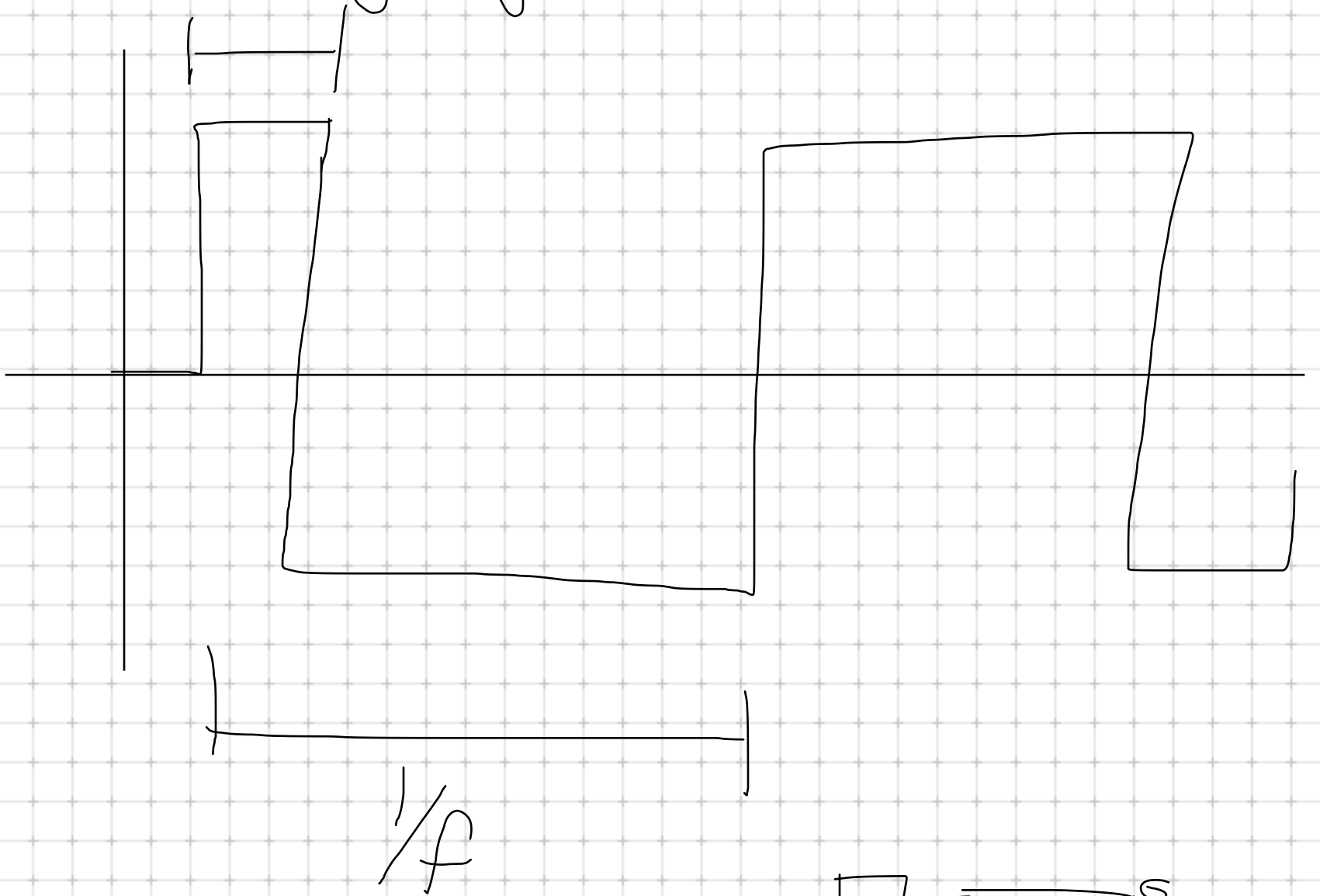
$$\sin(x) = \sum_{n=0}^{\infty} \frac{(-1)^n}{(2n+1)!} x^{2n+1} \quad \forall x$$

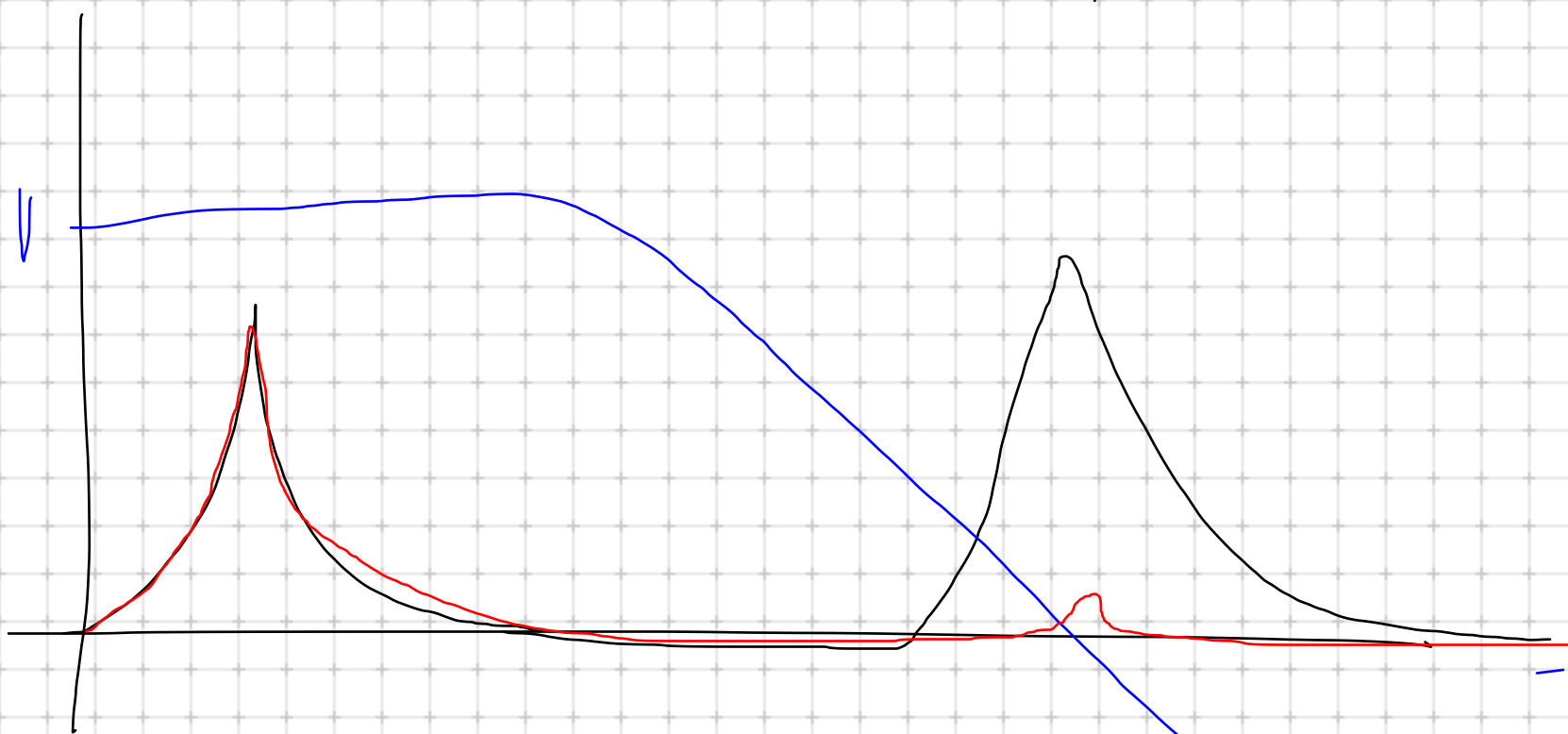
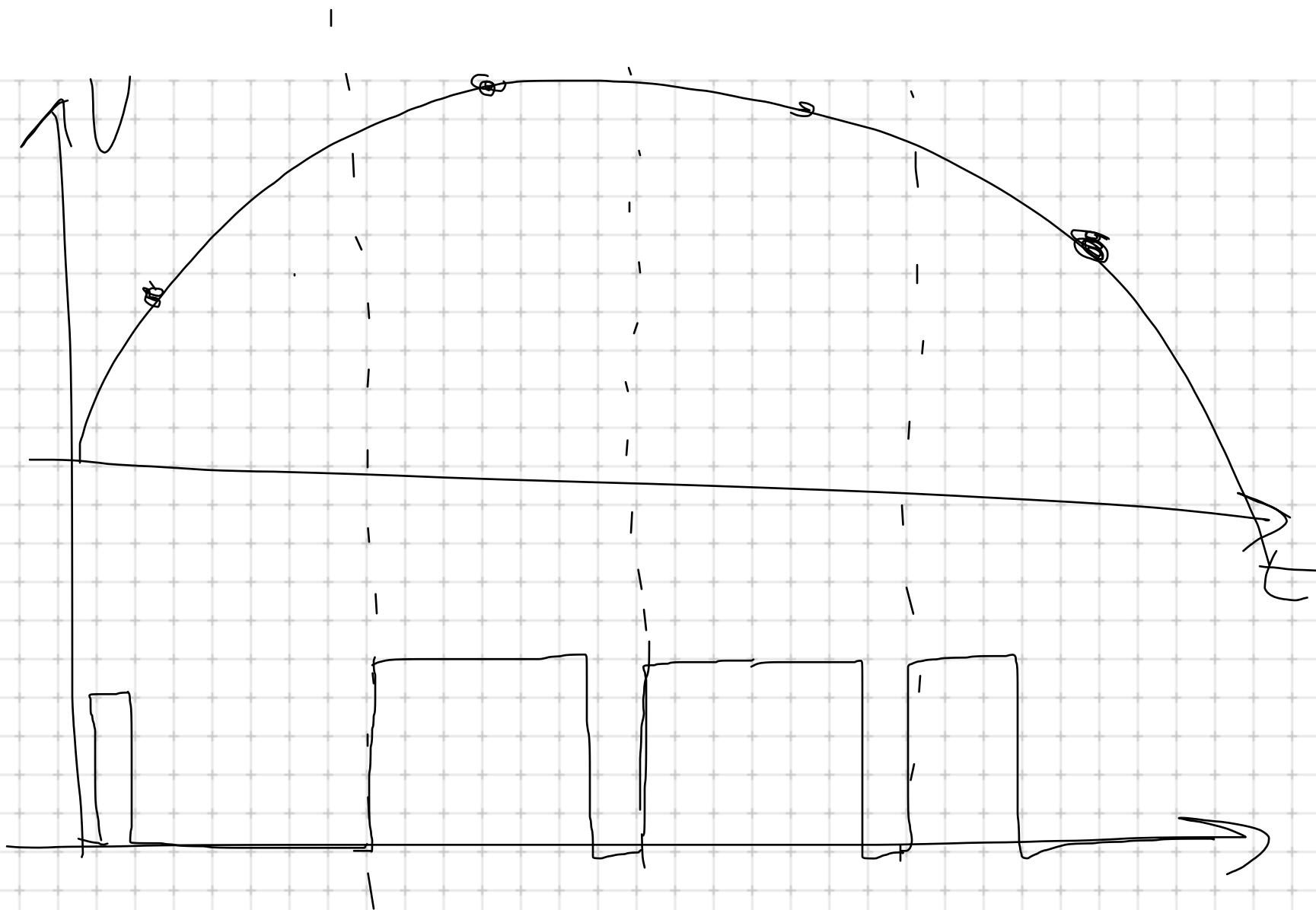
$$\arcsin(x) = \sum_{n=0}^{\infty} \frac{(2n)!}{4^n (n!)^2 (2n+1)} x^{2n+1} \quad \forall |x| \leq 1$$





duty cycle





a = RAW PWM output
 b = Filter frequency response
 c = $H_{pwm} \times H_{filter}$