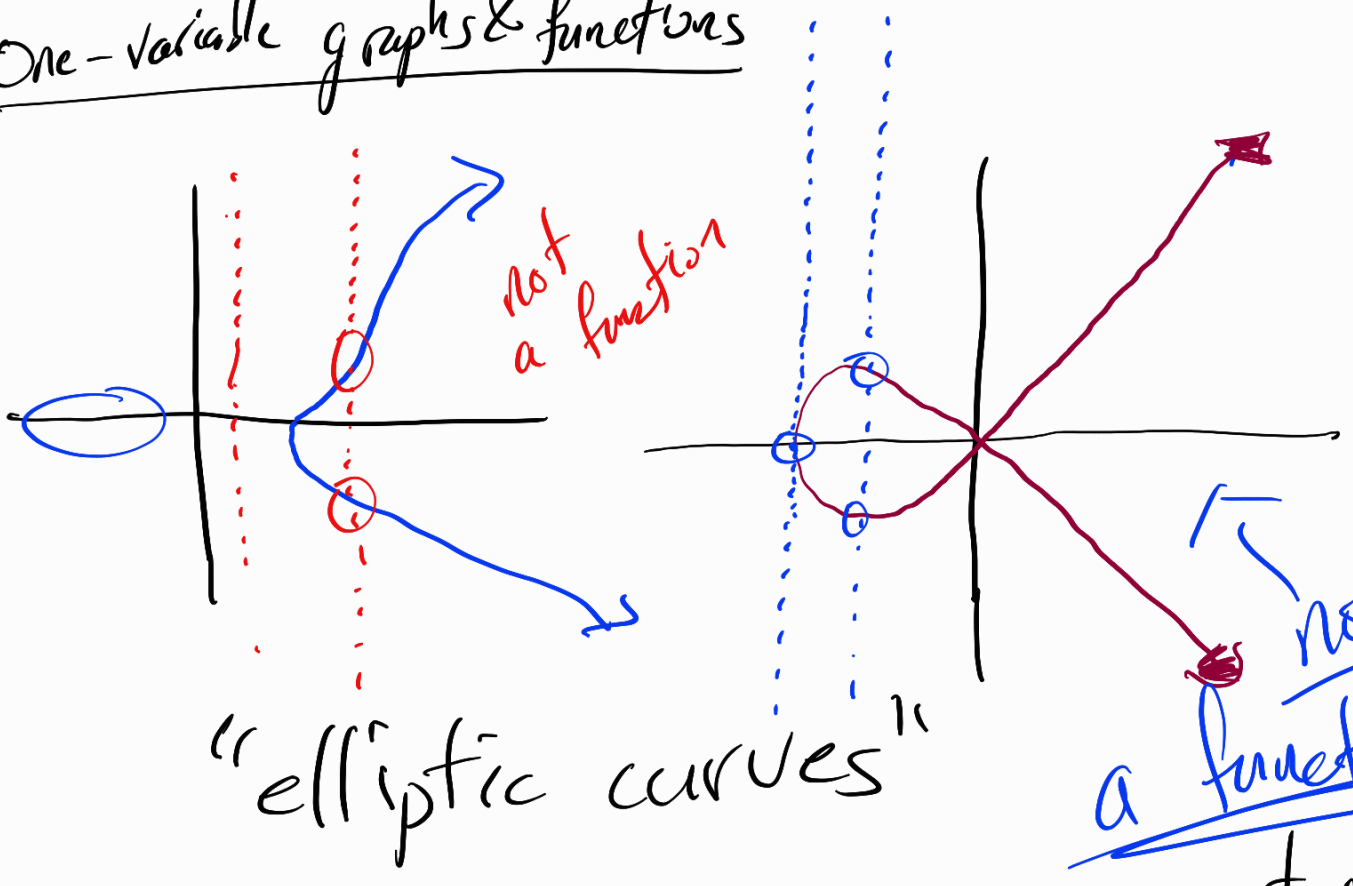
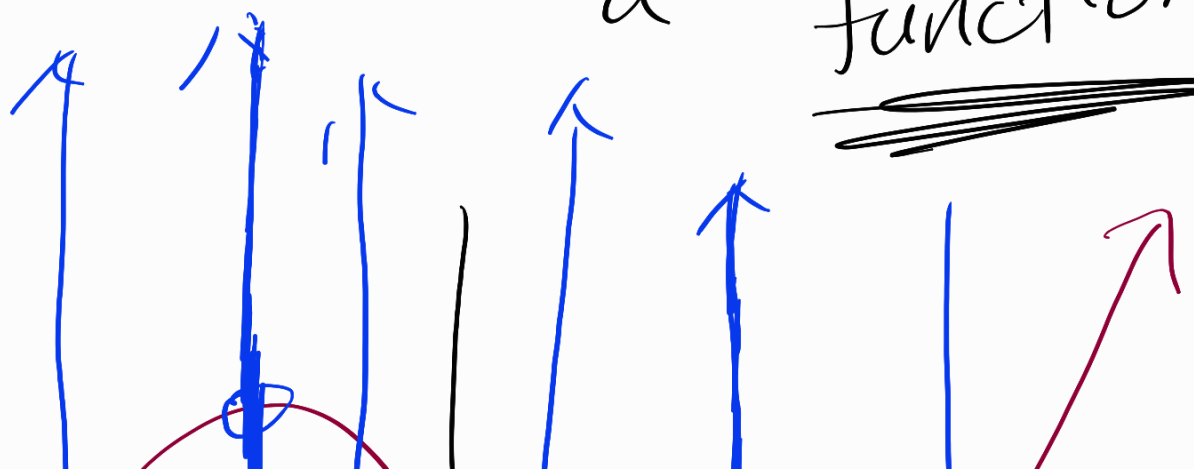
One-variable graphs & functions

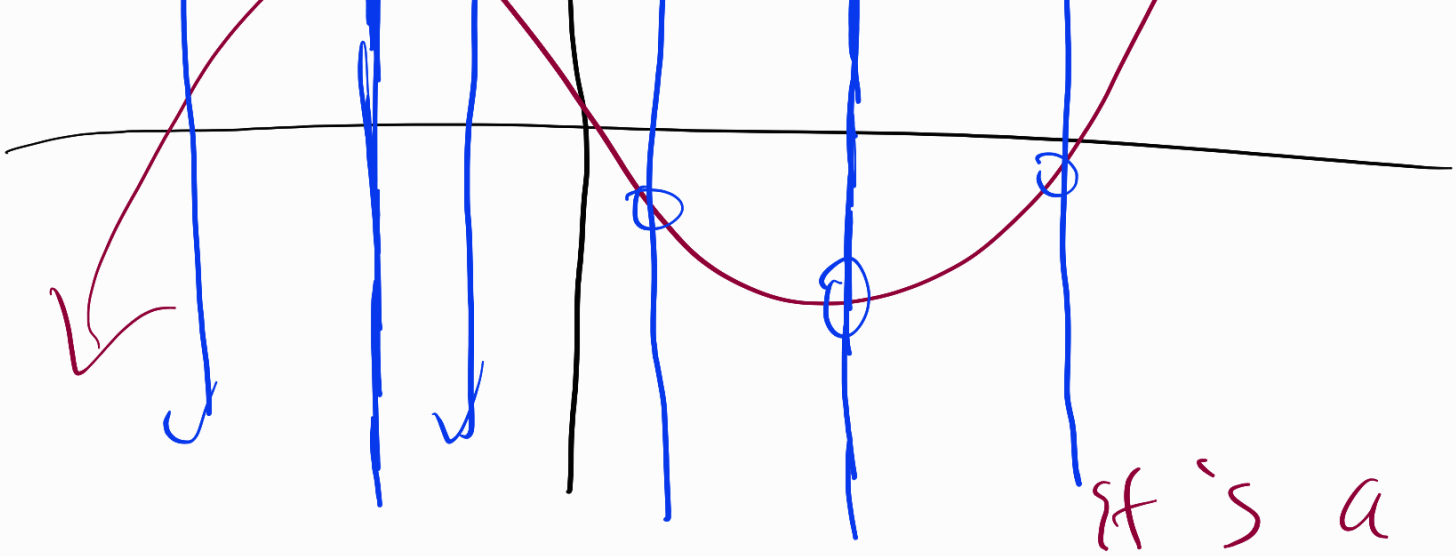


"elliptic curves"

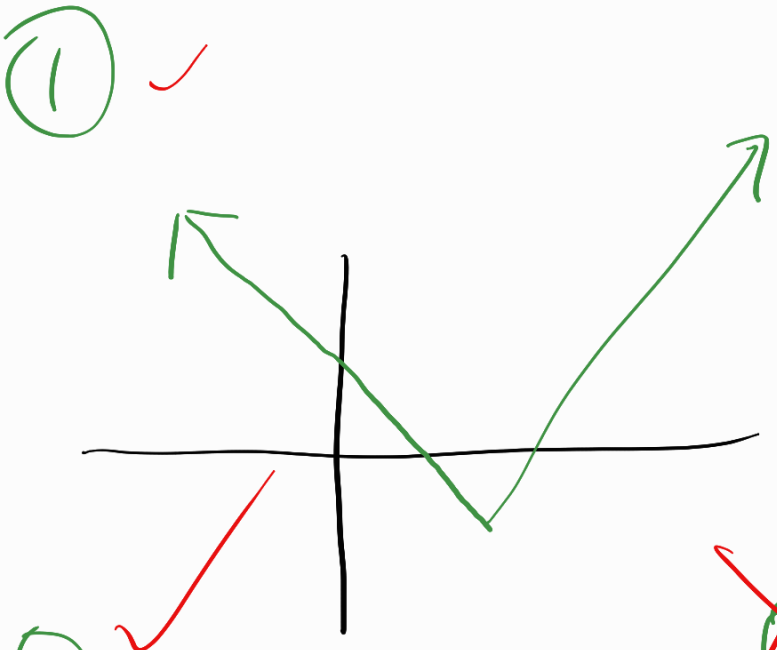
Elliptic curve cryptography

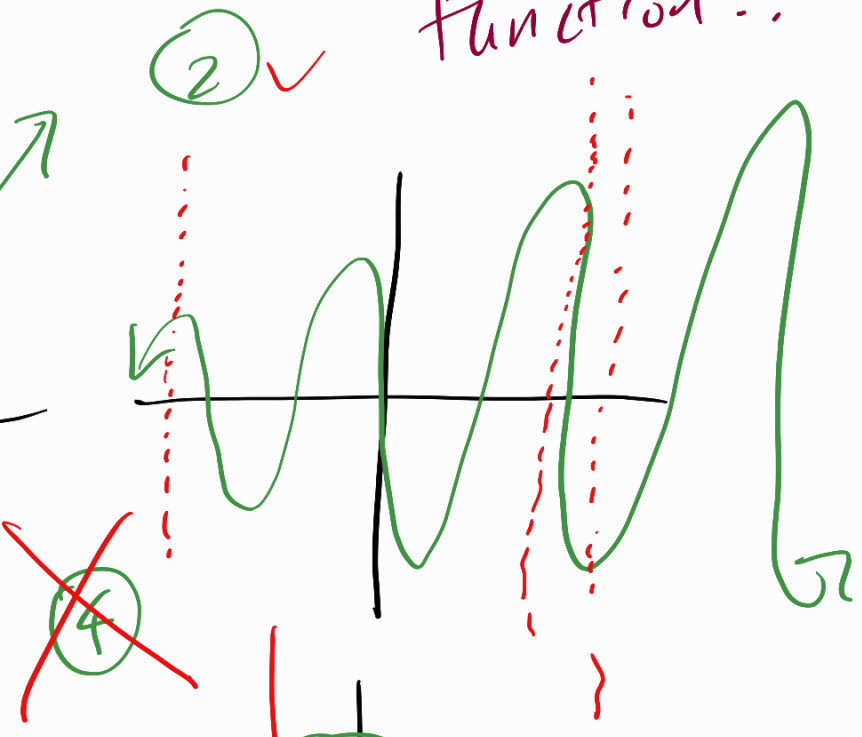
Vertical line test $\longleftrightarrow$ determines if curve/graph is a function

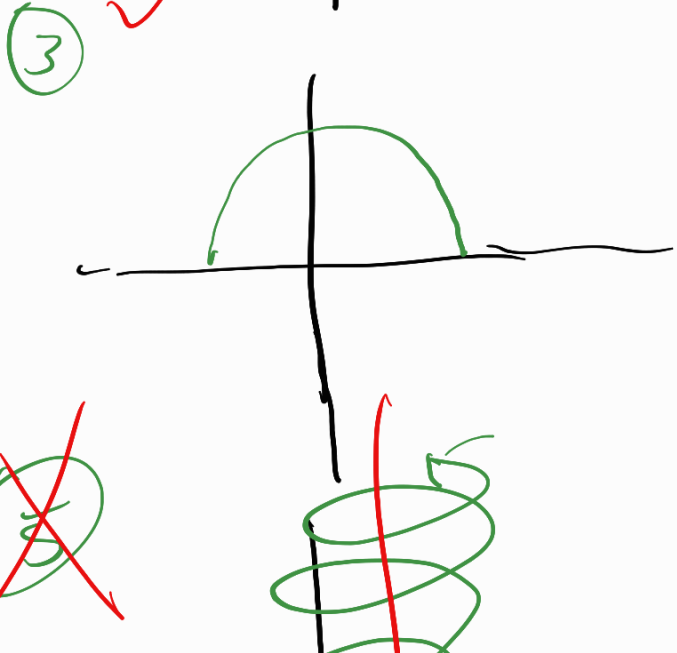


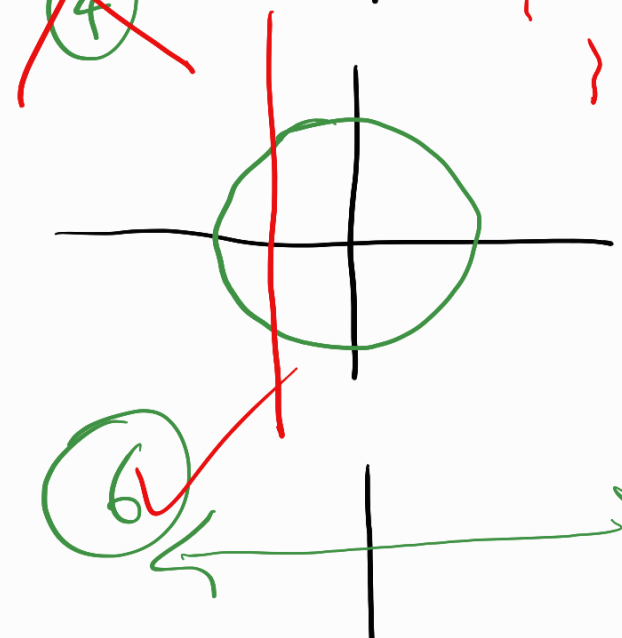


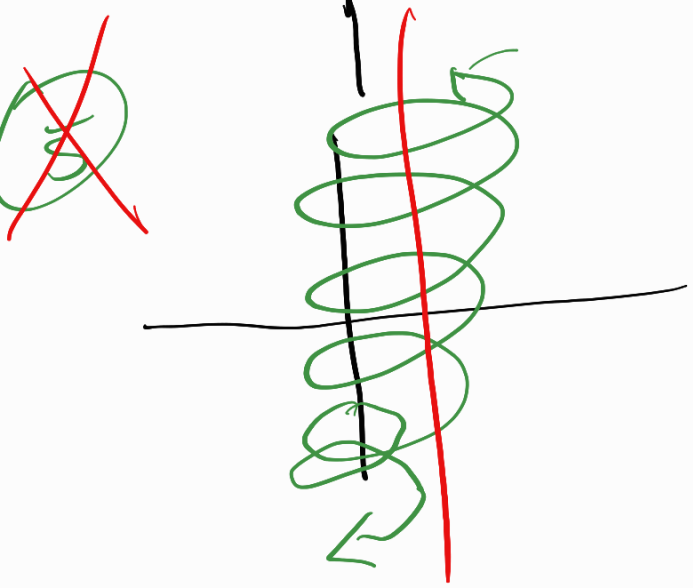
It's a function!!

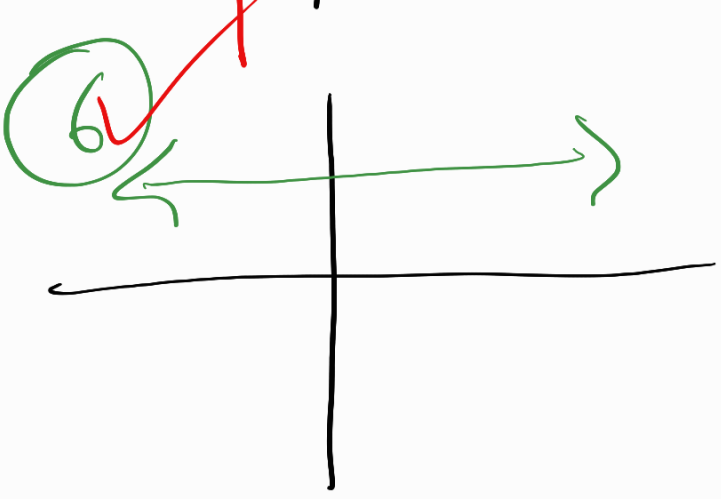












$$f(x) = 2x + 3$$

$$f(-2) = 2(-2) + 3$$

$$= -4 + 3 \rightarrow -1$$

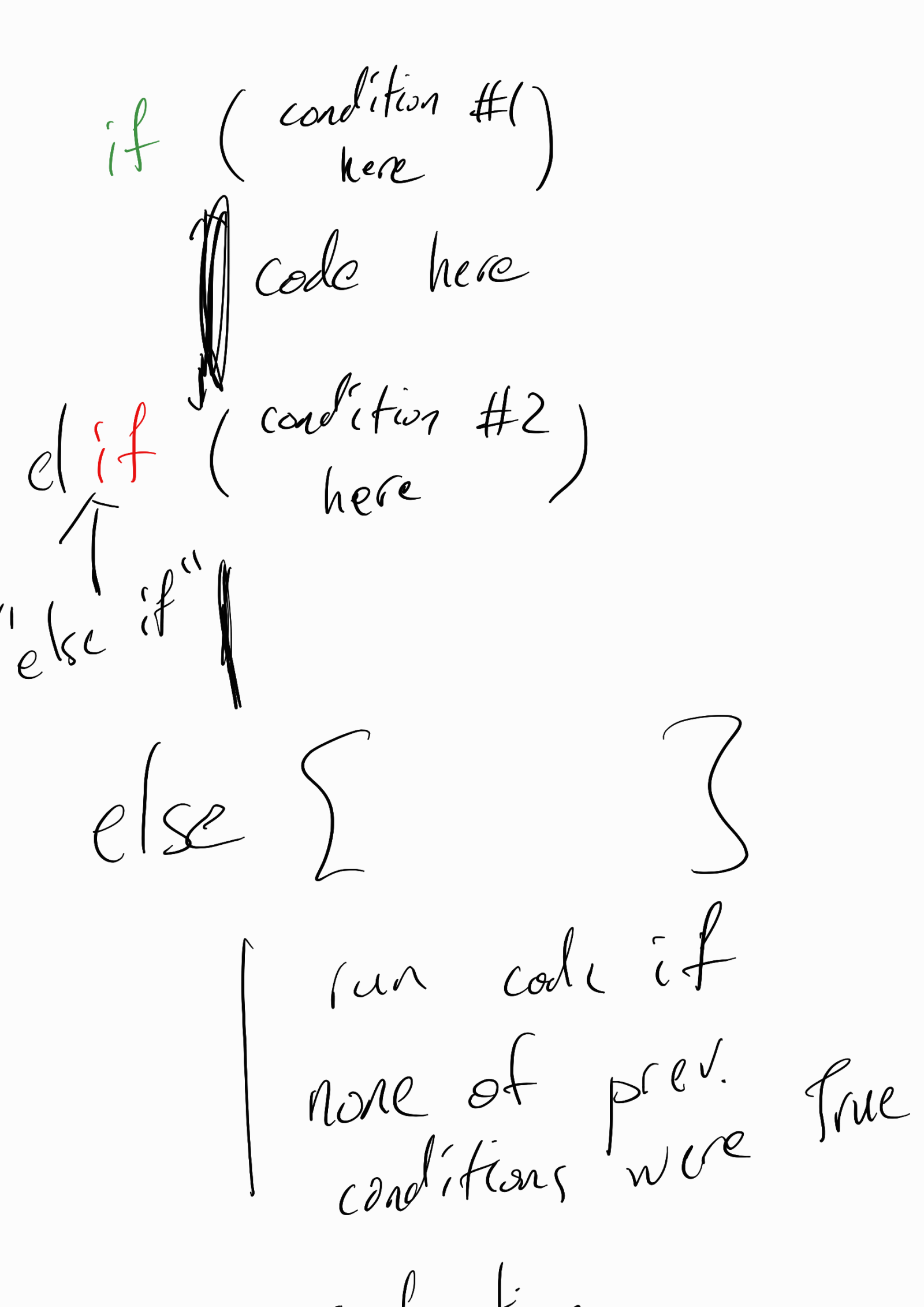
$$f\left(\frac{1}{2}\right) = 2\left(\frac{1}{2}\right) + 3 \rightarrow 4$$

$$f(x) = 3$$

$$f(0) = 3$$

$$f(2023) = 3$$

$x =$


if (condition #1 here)
code here
elif (condition #2 here)
"else if"
else { }
run code if none of prev. conditions were True

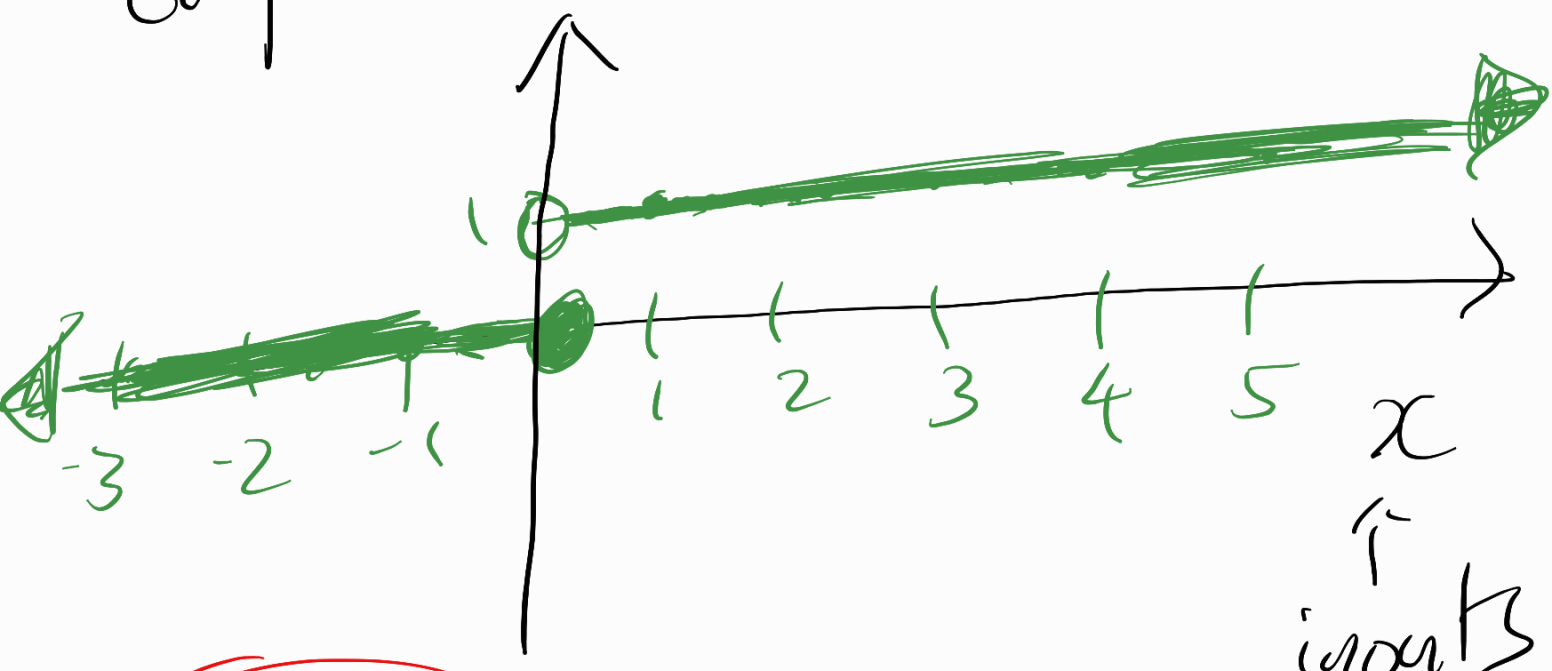
Your function

$$f(x) = \begin{cases} 1 & \text{if } x > 0 \\ 0 & \text{else} \end{cases}$$

outputs

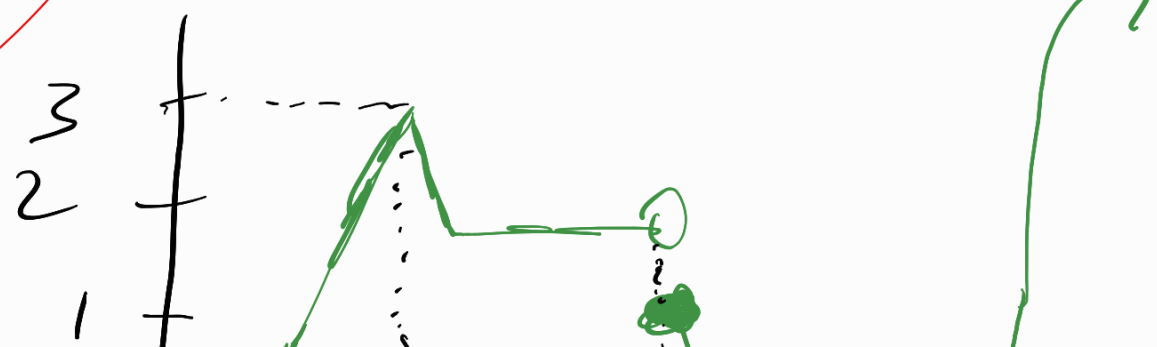
conditions

outputs



inputs

$f(1) = 0$



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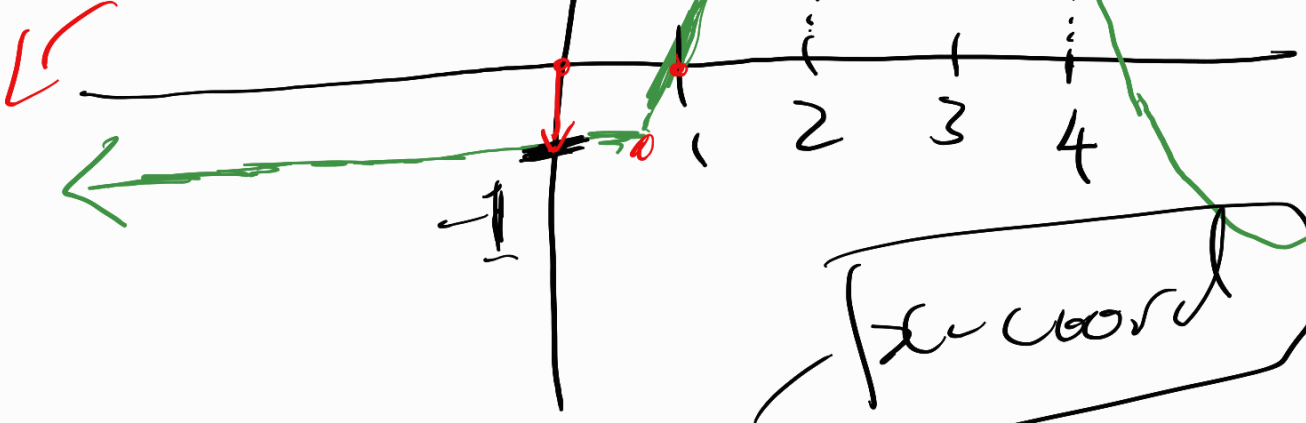


x-coord

y-coord

Q: $f(-2023) = -1$

$f(0) = -1$

$f(4) = 1$

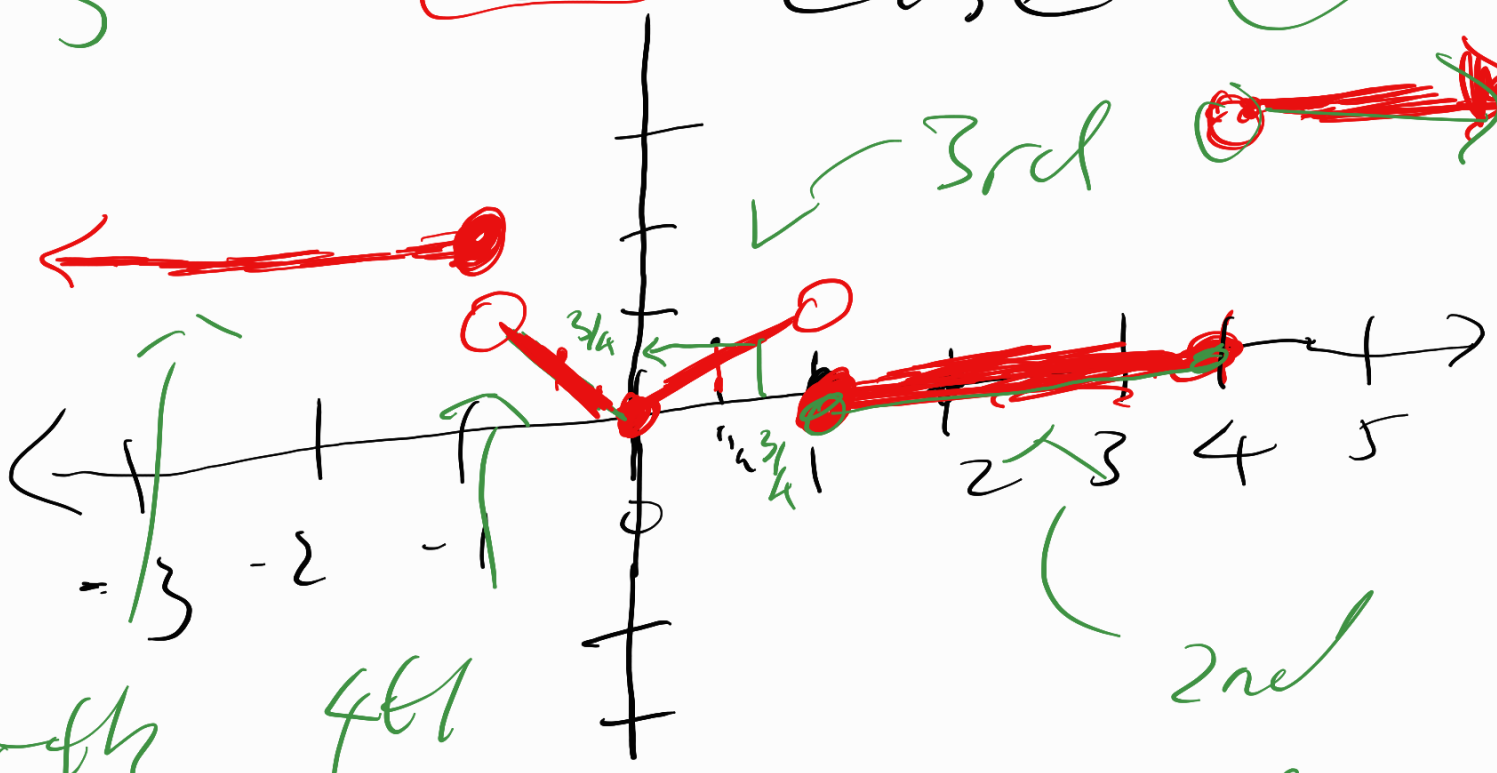
Graph

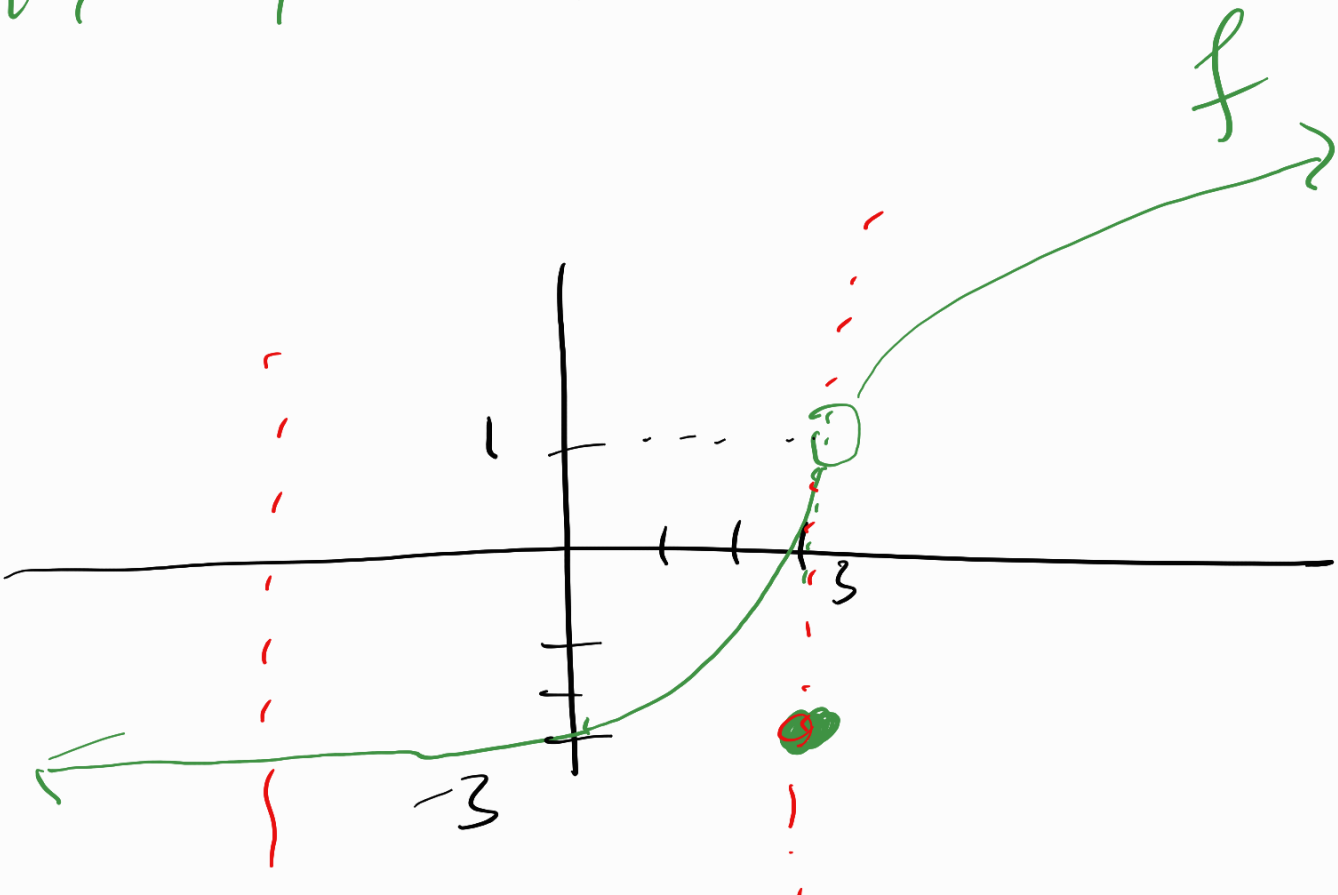
$$f(x) = \begin{cases} 3 & \text{if } x > 4 \\ 0 & \text{if } 1 \le x \le 4 \\ x & \text{if } 0 < x < 1 \end{cases}$$

#3

#4 $-x$ if $-1 < x < 0$

#5 → 2 else 1





Q1 is the curve

a function

Q2 if so, what is

$f(3) = -3$