Q1

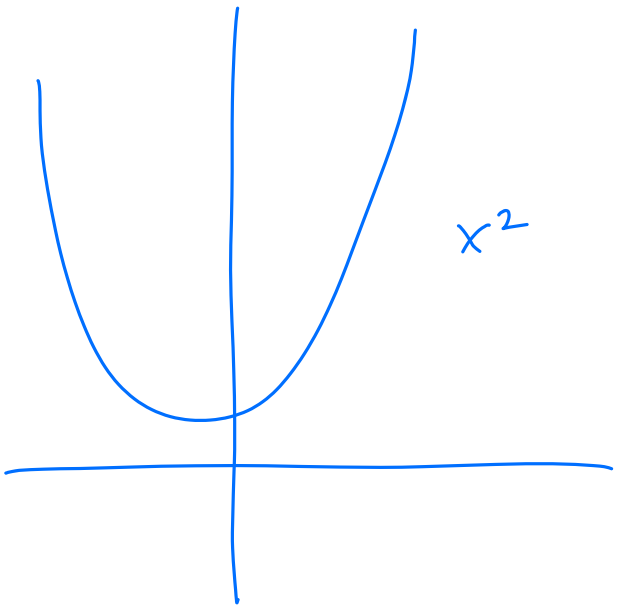
Quiz time!

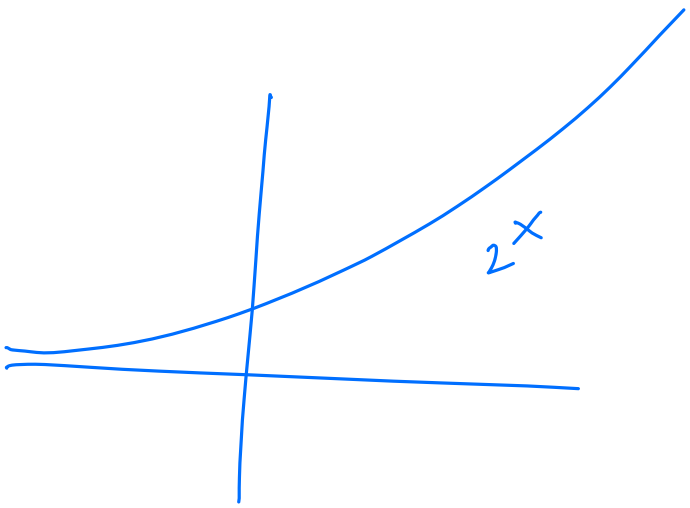
Quiz Ended!

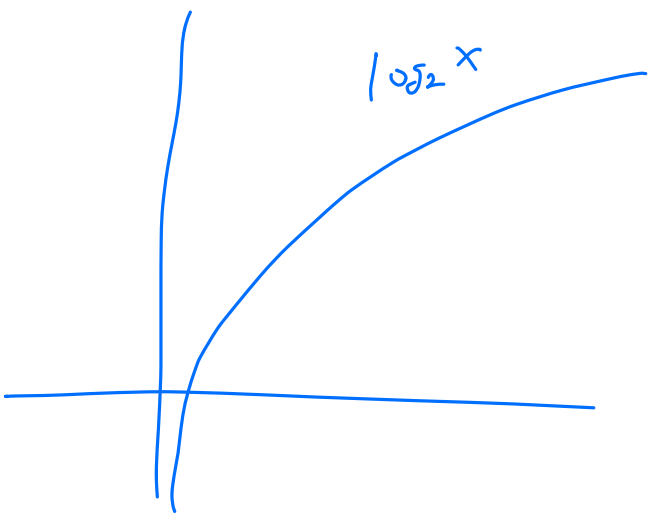
Which of the following type of functions is not continuous?

79 users have participated

A	Quadratic functions	4%
B	Exponential functions	5%
C	Logarithm functions	11%
✓ D	All of the above are continuous.	80%







Q2

Quiz time!

Quiz Ended!

For which value of `a` is the following function continuous?
`f(x) = x^2 if x >= a`, and `f(x) = x if x < a`.

72 users have participated

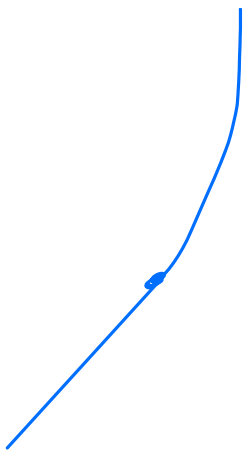
✓	A	1	53%
	B	-1	15%
	C	2	26%
	D	-2	6%

$$f(x) = \begin{cases} x^2, & x >= a \\ x, & x < a \end{cases}$$

$a = 1$

$\Rightarrow 1^2 = 1$

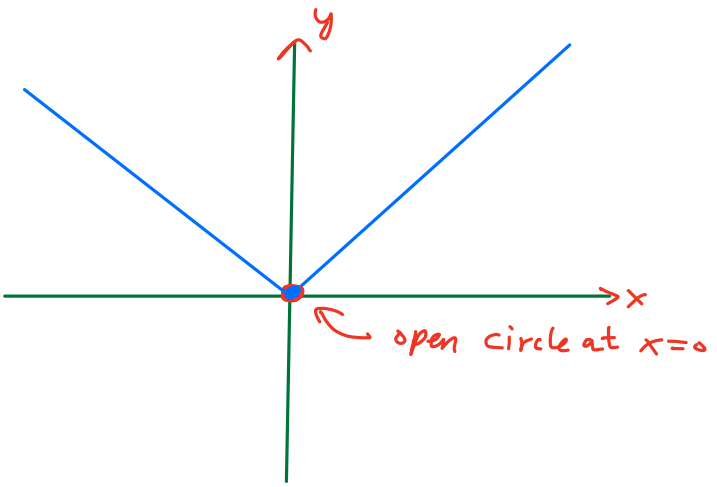
$\Rightarrow 1$



HW

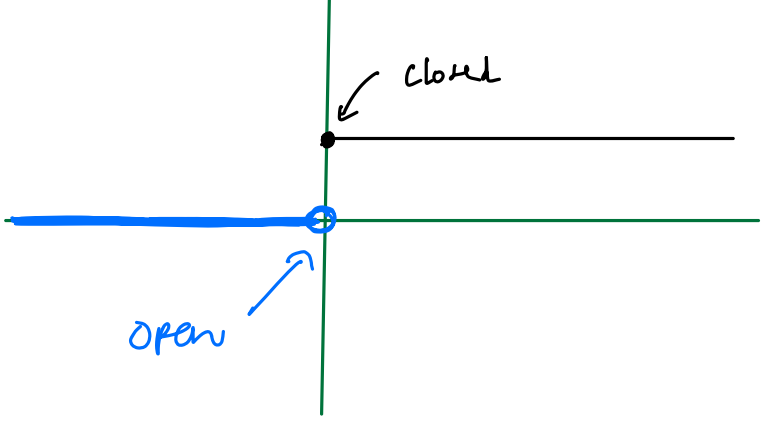
$$f(x) = \begin{cases} x, & x > 0 \\ -x, & x <= 0 \end{cases}$$

$|x|$



Step Fn

$$u(x) = \begin{cases} 0 & \text{for } x < 0, \\ 1 & \text{for } x >= 0 \end{cases}$$



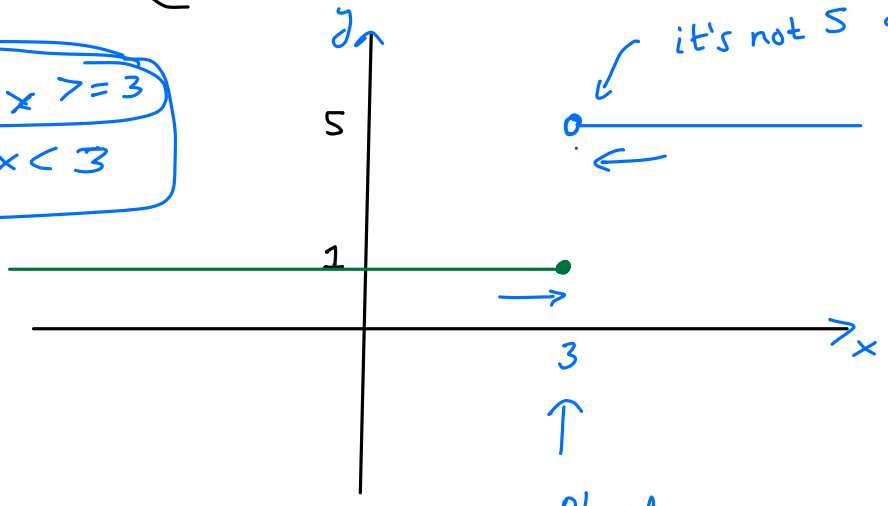
Not continuous

$$y = \begin{cases} 5, & x > 3 \\ 1, & x <= 3 \end{cases}$$

At $x = 3$, is it 5? NO

At $x = 3$, is it 1? YES

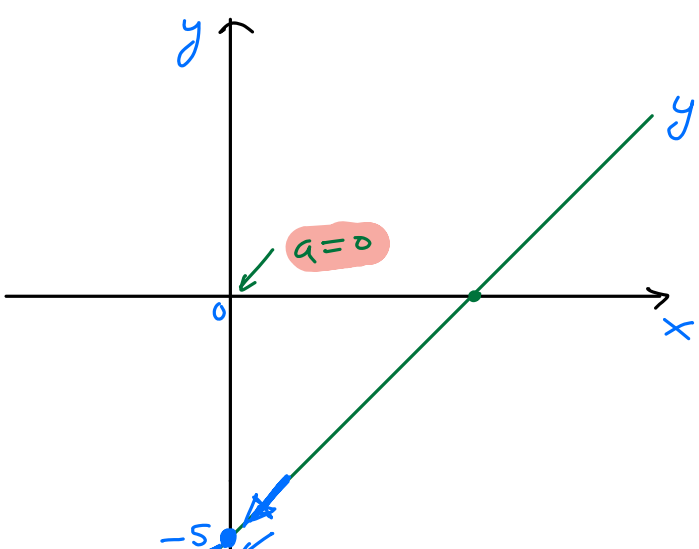
$y = \begin{cases} 5, x >= 3 \\ 1, x < 3 \end{cases}$



it's not 5 at $x = 3$.

Pt of discontinuity

Q3 $f(x) = x - 5$



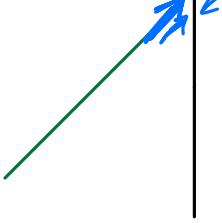
at $a = 0$

LHL =

RHL =

0-5

= -5



KGHISV

Quiz time!

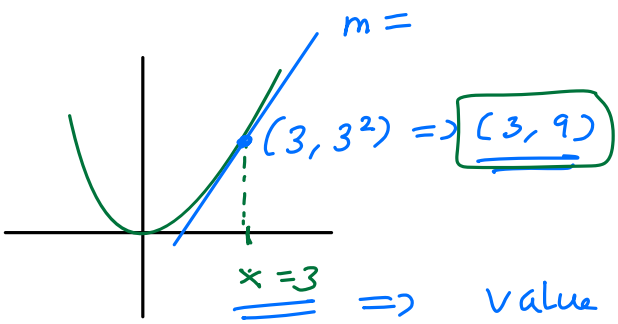
Quiz Ended!

We want to find the equation of the tangent line to the function f(x) = x^2 at a point x = 3. What is one point that the tangent line passes through?

53 users have participated

A	(3, 3)	8%
B	(3, 6)	13%
✓ C	(3, 9)	79%
D	(3, 12)	0%

$f'(x) = 2x$



=> value of $f'(x)$ at $x = 3$

=> $2(3) = 6$

$y - y_1 = m(x - x_1)$

$\Rightarrow y - 9 = 6(x - 3)$

$\Rightarrow y - 9 = 6x - 18$

$\Rightarrow \boxed{y = 6x - 9}$