## 1 | Types of Discontinuity

## 1.1 | Infinite Discontinuity (verticle asymtote)

Double Sided Limit: does not exist Function: not defined

$$f(x) = \frac{x^2+2}{x^2-4}$$
 where  $x = 2$ 

## 1.2 | Jump Discontinuity (gap)

Double Sided Limit: does not exist Function: defined

"a ceiling function" 
$$f(x) = \lceil x \rceil$$
 where  $x = 3$ 

## 1.3 | Point Discountinuity (hole)

Double Sided Limit: exists Function: not defined

$$f(x) = \frac{x^6 - 1}{x^{10} - 1}$$
 where  $x = 1$ 

Division by 0/infinite discontinutiy => undefined

Hole => not defined

Sq. Root Functions => not defined when x={negative number}