Assignemnt 3

1 Given the maximal possible domain (as a subset of $\mathbb{R}$) of functions defined by the formulas

- $f(x) = \frac{1}{x+1}$.
- $f(x) = tan(x)$.
- $f(x) = sin(x)$.

2 Draw the graph of the following functions

- $f(x) = x^n$ where $n \geq 0$ is an integer.
- $f(x) = e^x$.
- $f(x) = sin(x)$.
- $f(x) = x^3 - x$.
- $f(x) = x^2 - 5x + 6$.
- $f(x) = 0$ if $x < 0$ and $f(x) = 1$ otherwise.

3 Define what do you mean by *the function f approaches the limit ℓ near a.*