This is our Assignment!

Exercise 1

We can now use pretty versions of φ and ε, the round verion of φ is also available: ϕ.

Exercise 2

a) Common logic symbols are easy to use:
If $\mathsf{FO} \supseteq \Phi \models \mathfrak{A}$ for some infinite $\mathfrak{A}$, then for every cardinal $\kappa \geq |\mathfrak{A}|$ there exists a $\mathfrak{B} \models \Phi$ with $|\mathfrak{B}| \geq \kappa$.

b) And the same is true for complexity classes:
For any function $f(n) \in \Omega(\log n)$,
$\mathsf{NSPACE}(f(n)) = \mathsf{co-NSPACE}(f(n))$ and $\mathsf{NSPACE}(f(n)) \subseteq \mathsf{SPACE}(f(n)^2)$.

Exercise 3

We can also make some graphs: