Before beginning this homework assignment, please review the guidelines for submitting homework. Remember to write down the total amount of time spent working on the assignment at the top of what you turn in.

This assignment is intentionally short in order to give you more time to study for the exam.

1. Some more negations (i.e. review)

One can never have too much practice negating mathematical statements. Write the negations of the following statements as "positively" as possible.

1. If $A$ is a set with $n$ elements then the power set of $A$ has $2^n$ elements.
2. For every $a \in A$ there exists $b \in B$ such that $a + b \neq b + a$
3. If $A$ is a set, there exists a set $B$ such that $A \subseteq B$ and $A \neq B$.
4. For every $N \in \mathbb{N}$, there exists $n \geq N$ such that $|1 - \frac{1-n}{1+n}| < \varepsilon$. (Here $\varepsilon$ is a fixed positive number.)
5. If $\mathcal{T}_\alpha$ is a topology on $X$ for every $\alpha \in \Lambda$, then $\bigcap_{\alpha} \mathcal{T}_\alpha$ is a topology on $X$.
6. There is a group $G$ and an element $a \in G$, such that for every $b \in G$, $a \circ b \neq b \circ a$. 