MATHEMATICAL LOGIC — ASSIGNMENT TWO

(1) Prove that $(A \vee \forall x.\, B) \supset \forall x.\, (A \vee B)$ when $x \notin \mathsf{FV}(A)$. Find a counterexample if $x \in \mathsf{FV}(A)$.
(2) State and prove the Compactness Theorem.
(3) Define an alternative model of real numbers in which there is constant ∞ such that $1/\infty = 0$.

Each question is worth 12 points. The points in all the four assignments will be added together and the result will be divided by 4, and this will be the final result. Remember to mark your answer sheet with your name.

Date: November 28^{th}, 2018.