INTRO TO ABSTRACT MATHEMATICS
SPRING 2020

REVIEW TOPICS
EXAM 1

Section 1.1. Statements, T/F, connectives ($\wedge$, $\vee$ and $\neg$).

Section 1.2. Truth tables, logical equivalence, fundamental equivalences (DeMorgan's laws, commutative laws, associative laws, idempotent laws, absorption laws, distributive laws, double negation law), tautology, contradiction, "algebraic" manipulation of symbolic statements.

Section 1.3. Variables in logical expressions, free/bound variables, sets, elements, membership, set-builder (i.e. $\{x \,|P(x)\}$) notation and its variants, universe (of discourse), truth sets, the sets $\mathbb{N}$, $\mathbb{Z}$, $\mathbb{Q}$, $\mathbb{R}$ and $\mathbb{C}$.

Section 1.4. Set equality, subsets, relationship between set equality and subsets, operations on sets (union, intersection, difference, complement), empty set, disjoint sets, equality of sets by logical equivalence or double containment.

Section 1.5. The conditional connective ($\rightarrow$) and its truth table, conditional tautologies and deductive reasoning.