Math 2300
Selected Definitions from Section 2.1:

p.24
A **statement** (or **proposition**) is a sentence that is true or false but not both.

p.28
A **statement form** (or **propositional form**) is an expression made up of statement variables (such as p, q, and r) and logical connectives (such as $\sim$,$\wedge$, and $\vee$) that becomes a statement when actual statements are substituted for the component statement variables.

The **truth table** for a given *statement form* displays the truth values that correspond to all possible combinations of truth values for its component statement variables.

p.30
Two *statement forms* are called **logically equivalent** if, and only if, they have identical truth values for each possible substitution of statements for their statement variables. The logical equivalence of statement forms P and Q is denoted by writing **P ≡ Q**.

Two *statements* are called logically equivalent if, and only if, they have logically equivalent forms when identical component statement variables are used to replace identical component statements.

p.34
A **tautology** is a *statement form* that is always true regardless of the truth values of the individual statements substituted for its statement variables. A statement whose form is a tautology is a **tautological statement**.

A **contradiction** is a *statement form* that is always false regardless of the truth values of the individual statements substituted for its statement variables. A statement whose form is a contradiction is a **contradictory statement**.