(2) Explain the difference between a definition, a conjecture, a theorem, a proposition, and a lemma.

A **definition** is a logical mapping from a word or phrase to an object, description, or concept. It it unique from other terminologies because it makes no detail concerning truth or falsity.

A **conjecture** is a mathematical guess. It is a light consideration that does not have a formal proof by which it is declared with. Often, it will loosely be used to guess truth and falsity of a statement.

A **theorem** is a logically sound proposition (or series of logically sound propositions) that is often provided with a proof. Unlike conjectures and propositions, theorems are logically sound arguments of fact.

A **proposition** is a statement of fact that concerns truth and falsity. Propositions must have no ambiguity, unlike conjectures.

A **lemma** is a short theorem presented to give way to a larger theorem. Lemmas are theorems but they are unique in being short and given only in association with another theorem.