**Worksheet 1**

**Proposition, Compound Statement, Conjunction and Disjunction**

1. Which of the following are propositions? What are the truth values of those that are propositions?
2. $x+7=10$
3. $4+7>11$
4. A triangle is a four-sided polygon.
5. This sentence is false.
6. Tea comes with dinner.
7. What is your auntie’s name?
8. Define
9. Proposition
10. Compound statement
11. Use the following statements to **write a compound statement** for each conjunction and disjunction. Then **identify its truth value**. **Explain your answer**.

*P*: A week has seven days.

*Q*: There are 20 hours in a day.

*R*: There are 60 minutes in an hour.

1. *P* and *R*
2. *P* ∧ *Q*
3. *R* or *Q*
4. *Q* ∨ *P*
5. Based on the Question 3, construct the truth table for each compound statement.

**Negation and Truth Table**

1. **Negate** the following statements. **Express the negations in English**.
2. All classrooms have at least one chair that is broken.
3. No classroom has only chairs that are broken.
4. Every student in this class has taken Discrete Mathematics or Computing Mathematics.
5. **Construct a truth table** for the following compound statements.
6. $\~q\rightarrow \left(\~p∨q\right)$
7. $\left(p∧q\right)∨\~p$
8. $(\~p\rightarrow q)⋁(\~p⋀\~q)$