Tutorial Sheet 5
(Answers)

1. a) proposition, T

    b) proposition, F

    c) proposition, F

    d) not a proposition

2. a) Today is not Friday

    b) There is pollution in Hong Kong

    c) $2 + 3 \neq 5$

3. a) $p \wedge q$

    b) $p \wedge \sim q$

    c) $\sim p \wedge \sim q$

    d) $p \rightarrow q$

4. a) $q \vee r$

    b) $p \wedge q$

    c) $p \wedge (q \vee r)$

5. a) $\sim p \wedge q$

    The conversion in logic is that the words *but* and *and* mean the same thing.

    "It is not hot but it is sunny" is equivalent to "It is not hot and it is sunny".

    b) $\sim (p \wedge q)$

    c) $\sim p \wedge \sim q$

    To say it is neither hot nor sunny means that it is not hot and it is not sunny.