

Name: Solution

Student Number: _____

Mark: ____/10

MAE 106: QUIZ 1

INSTRUCTIONS:

- (1) You have 15 minutes to complete this quiz.
- (2) You may not consult your neighbour, look at any notes, or the textbook.
- (3) Answers written in pencil will not qualify for remarking.

QUESTIONS:

- (1) Indicate which of the following are propositions. (2 marks)
 - (a) 5 is an even number or 17 is an even number. **Yes/No**
 - (b) $4 > 10$ **Yes/No**
 - (c) What time is it? **Yes/No**
 - (d) Come to class! **Yes/No**
 - (e) He enjoys mathematics. **Yes/No**
 - (f) It is raining right now, and I'm wet. **Yes/No**
- (2) Complete the following truth table. (6 marks)

p	q	$\neg p$	$p \wedge q$	$p \vee q$	$p \vee\vee q$	$p \rightarrow q$	$q \rightarrow p$
T	T	F	T	T	F	T	T
T	F	F	F	T	T	F	T
F	T	T	F	T	T	T	F
F	F	T	F	F	F	T	T

- (3) An important logical connective to computer scientists is **nand**, which we will denote with \uparrow . The *nand* connective produces a truth value of true if at least one of the propositions is false. Complete the table below. (2 marks)

p	q	$p \uparrow q$
T	T	F
T	F	T
F	T	T
F	F	T