

MATH 102: IDEAS OF MATH

WORKSHEET 9

Question 1. From your own experience, what is logic? How is it different from arts? How is it different from science?

Question 2. Technical definition:

(1) What is a *statement*?

(2) What is a *sentence*?

- (3) What is an *open sentence*?

Question 3. The following are logical rules.

- (1) What is $P \vee Q$?

- (2) What is $P \wedge Q$?

- (3) What is $\sim P$?

- (4) What is $P \Rightarrow Q$?

- (5) What is $P \Leftrightarrow Q$?

(6) What is the converse of $P \Rightarrow Q$?

Question 4. Discuss logical rules by drawing connection with set theory.

Question 5. What is a truth table? Draw the truth tables of all the above logical rules.