

Math 215. Homework 1

due 01/23/08

1. Construct a truth table for:

- (i) (not P) or Q
- (ii) not (P or Q)
- (iii) (not P) and Q

2. Prove that $|x + y| \leq |x| + |y|$

3. Complete truth table for statement $a \geq b$ for (a, b) given in table 1.3 p. 9

4. Give definition of:

- a) isosceles triangle and a definition of non isosceles triangle
- b) increasing function on an interval $[a, b]$ and non increasing function on the same interval.
- c) bounded function on an interval $[a, b]$ and unbounded function on the same interval.

5. Which of the following implications are true:

- a) $x^2 - 3x + 2 = 0$ implies $x = 2$ or $x = 1$.
- b) $x^2 - 3x + 2 = 0$ implies $x = 2$
- c) $x^2 - 3x + 2 = 0$ implies $x = 1$ and $x = 2$.