

# Math 215 Homework

January 25, 2008

1. Write a truth table to show that the following statement is true  $P$  implies  $P$  or  $Q$ .
2. Prove that the square of an even integer is even
3. Prove that if  $a < 0$ ,  $b > 0$  and  $|a| > b$  then  $a^2 > b^2$
4. Prove by contradiction that if  $n^2$  is even then  $n$  is even
5. Prove by contradiction that there do not exist integers  $m, n$  such that  $10m + 12n = 601$ .