Examlet 1B Foundations of Advanced Math 2/7/13

1. Show that the square of a throddodd integer is throdd.

2. Determine whether $(P \Rightarrow Q) \vee (P \Rightarrow R)$ is logically equivalent to $P \Rightarrow (Q \vee R)$.

3. a) If $p \equiv_6 1$, then $p \equiv_3 1$.

b) If $p \equiv_3 1$, then $p \equiv_6 1$.

4. $\sqrt{3}$ is irrational.

5. For all $n \in \mathbb{N}$, $n^2 \geq n$.