

**Examlet 1A      Foundations of Advanced Math      2/6/14**

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

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

3. If  $a \equiv_n b$ , and  $b \equiv_n c$  then  $a \equiv_n c$ .

4.  $\sqrt{2}$  is irrational.

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

