1. Show that the square of an odd integer is odd.

2. a) There is no positive real number which is closest to 0.

b) If x is an irrational, then x^2 is also irrational.

3. a) Determine whether an implication and its converse are logically equivalent.

b) Determine whether $(P \wedge Q) \rightarrow R$ is logically equivalent to $(P \Rightarrow R) \vee (Q \Rightarrow R)$

4. Show that if $a \equiv_n 1$, then $a^2 \equiv_n 1$.

5. The product of n odd integers is odd for any $n \geq 1$.