Examlet 1 **Foundations of Advanced Math** **2/3/23**

1. The sum of any two odd integers is even.

2. $P \Rightarrow Q$ is logically equivalent to its contrapositive.

3. If p, q, and r are integers for which $p|(q + r)$ and $p|q$, then $p|r$.

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

5. Let S be a collection of n integers with the property that $\forall a \in S$, $a \equiv_5 1$. Let p be the product of all the integers in S. Then $p \equiv_5 1$.