

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

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

3. a) If $a \equiv_n b$, then $a + 2 \equiv_n b + 2$.

b) If $a \equiv_n b$, then $2a \equiv_n 2b$.

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

5. For all $n \in \mathbb{N}$, $3 \mid (n^3 - n)$.

