

1. The sum of two bounded functions, both with domain \mathbb{R} , is bounded.

2. (a) Suppose $f : \mathbb{R} \rightarrow \mathbb{R}$ is an even function. Then $g(x) = [f(x)]^2$ is also an even function.

(b) Suppose $f : \mathbb{R} \rightarrow \mathbb{R}$ is a function for which $g(x) = [f(x)]^2$ is an even function. Then f is also an even function.

3. If $f : A \rightarrow B$ and $g : B \rightarrow C$ are surjective functions, then $g \circ f$ is surjective.

4. If $f : A \rightarrow B$ and $g : B \rightarrow C$ are injective functions, then $g \circ f$ is injective.

5. (a) The set of natural numbers is equipollent to the set of even natural numbers.

(b) The set $\{n \mid n \in \mathbb{N} \wedge n \geq 58\}$ is countable.