

1. Let  $f, g : \mathbb{R} \rightarrow \mathbb{R}$ .

(a) If  $f$  and  $g$  are both increasing, then  $f + g$  is increasing.

(b) If  $f + g$  is increasing, then  $f$  and  $g$  are both increasing.

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

3. If  $f : A \rightarrow B$  is a bijection, then  $f$  is invertible.

4. If  $A$  is equipollent to  $B$ , and  $B$  is equipollent to  $C$ , then  $A$  is equipollent to  $C$ .

5. The set of integers is countable.