

Name (1 pt):

Quiz 1 - Math 244 - Sample

1. (3 pts) What do the symbols \mathbb{N} , \mathbb{Z} , \mathbb{Q} , and \mathbb{R} represent? (One- or two-word answers are fine.)

2. (2 pts) What does it mean for a function $f : A \rightarrow B$ to be onto? (Explain briefly.)

3. (2 pts) What does it mean for a function $f : A \rightarrow B$ to be invertible?

4. (3 pts) What does the word “contrapositive” mean? Give an example to illustrate your answer.

5. (2 pts) What does the word “interval” mean?

6. (12 pts) Give an example in each part below. No explanations needed, but describe your example clearly.
 - (a) a function $f : \mathbb{R} \rightarrow \mathbb{R}$ and its inverse function $g : \mathbb{R} \rightarrow \mathbb{R}$

 - (b) a function $f : \mathbb{N} \rightarrow \mathbb{N}$ that is 1-1 but not onto (an explicit formula would be fine, but isn't necessary)

 - (c) a function $f : \mathbb{N} \rightarrow \mathbb{N}$ that is onto but not 1-1 (an explicit formula isn't necessary—just describe the function)

 - (d) a statement and its converse

Pledge: I pledge my honor that I have neither seen nor done dishonest work on this test.

Signed: