

Math 235 - Dr. Miller - Activity: Review of Function Proofs

To give you feedback prior to HW #11, here are some short proofs to practice in class today. We'll go over them either at the end of today's class or the start of next class.

1. Define $f : \mathbf{R} \rightarrow \mathbf{R}$ via $f(x) = x^2 - 5x + 1$. Proposition: f is not onto.

2. Define $f : \mathbf{R} \rightarrow [-1, \infty]$ via $f(x) = x^2 - 1$. Proposition: f is onto.

3. Define $f : \mathbf{R} \rightarrow \mathbf{R}$ via $f(x) = x + \frac{1}{x}$. Proposition: f is not one-to-one.

4. Define $f : \mathbf{R} \rightarrow \mathbf{R}$ via $f(x) = e^x + e^{2x}$. Proposition: f is one-to-one.