

Name, Last Name:

Grade:

Student No:

Math 103: Quiz # 6

Spring 2007

You have 40 minutes.

Consider the relation $f \subseteq \mathbb{R}^2$ that is defined by

$$f := \left\{ (x, y) \in \mathbb{R}^2 \mid y = \frac{1}{\sqrt{1+x}} \right\}.$$

1. Determine the domain and range of f . (20 points)

2. Prove that f is well-defined. (20 points)

3. Is f one-to-one? Prove the validity of your response. (20 points)

4. Determine the image of the interval $(-2, 2)$ under f . (20 points)

5. Determine the inverse image of the interval $(-2, 2)$ under f . (20 points)