

Math 181 Honors Quiz 1 Version A

1. Determine all intervals of numbers x satisfying the following inequalities.

(i) $|2x + 1| < 5$

(ii) $x < \frac{1}{x}$

2. Find the domain of the function $f(x) = \frac{1}{\sqrt{x-1}}$. In other words, for what numbers could you define a function f by this formula?

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3. All the usual laws of elementary algebra can be deduced from the field axioms. We have written these as 10 axioms in class. List these axioms:

Associativity

Commutativity

Distributivity

Identity

Inverses

4. [Extra Credit] Is it possible to derive any of the 10 field axioms above from the others? Explain your answer.