

# MATH 235 (SPRING 2014) QUIZ I

MON FEB, 3 2014

**Name:**

**Attempt all problems. Box your answers.**

(1) Find the domain of definition of the following functions:

(a)  $f(x) = \frac{1}{\sqrt{x^2-1}}$ .

(b)  $g(x) = \ln(x+2)$ .

(2) Plot carefully the graph of the rational function  $h(x) = \frac{(x-3)(x+2)}{(x+1)(x-1)}$ .

(3) Solve the inequality:  $|5x + 1| > 2$ . Express your solution in interval notation.

(4) Explain when we can say  $\sin^{-1}(-1) = -\frac{\pi}{2}$  and not  $\frac{3\pi}{2}$ . Use graphs if necessary.

(5) Prove that the sum of a nonzero rational number and an irrational number is irrational.