

**WRITE YOUR NAME:**

MAC 2241 Homework 2  
Due in class, Friday February 2nd  
You can use more paper if necessary, but please STAPLE

**Question 1.** Find the domain of the function.

$$f(x) = \frac{\sqrt{3-x}}{\sqrt{x^2-1}}$$

**Question 2.** Find the functions  $f \circ g$  and  $g \circ f$  and their domains. Simplify as much as possible.

$$f(x) = x + \frac{1}{x}, \quad g(x) = \frac{x+1}{x+2}$$

**Question 3.** Find the domain of the function.

$$f(x) = \frac{5}{1-e^x}$$

**Question 4.** What values of  $x$  satisfy the inequality  $\ln x < 0$ ?