

**WRITE YOUR NAME:**

MAC 2311 Homework 2  
Due in class, Friday September 22nd  
You can use more paper if necessary, but please STAPLE

**Question 1.** Guess the approximate value of

$$\lim_{x \rightarrow 3} \frac{2^x - 8}{x - 3}$$

by evaluating at some specific values of  $x$ . You may use a calculator or computer for this question.

**Question 2.** Evaluate the limit.

$$\lim_{x \rightarrow 0} \frac{\sqrt{x^2 + 4} - 2}{x^2}$$

**Question 3.** Evaluate the limit.

$$\lim_{x \rightarrow \infty} (\sqrt{x^2 + 10x} - x)$$