

WRITE YOUR NAME:

MAC 2311 Homework 1

Due in class, Friday January 20th

You can use more paper if necessary, but please STAPLE

Question 1. If $f(x) = x^2$, find and simplify each of the following.

- $f(7)$
- $f(-7)$
- $f(7.02)$
- $f(7+h)$
- $f(7) + h$

Question 2. Expand and simplify each of the following.

- $(a-b)(a+b)$
- $(\sqrt{x+h} - \sqrt{x})(\sqrt{x+h} + \sqrt{x})$
- $\frac{\sqrt{x+h} - \sqrt{x}}{h} \cdot \frac{\sqrt{x+h} + \sqrt{x}}{\sqrt{x+h} + \sqrt{x}}$

Question 3. Evaluate the limit. (Hint: Do some algebra.)

$$\lim_{x \rightarrow 0} \frac{\sqrt{x+1} - 1}{x}$$