Intro to Math for CS **NAME:**
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Quiz July 7
20 minutes

Question 1

(a) Rewrite the following statements formally using quantifiers and variables. (1 point each)

(b) Write a negation for the statement. (1 point each)

Consider the statements:

1. Everybody loves somebody.

   (a)

   (b)

2. Somebody loves everybody.

   (a)

   (b)

3. An even integer equals twice some integer.

   (a)

   (b)

4. Every action has an equal and opposite reaction.

   (a)

   (b)

5. There is a program that gives the correct answer to every question posed to it.

   (a)

   (b)

Question 2

Consider the following definition of a limit of a sequence:

For all real numbers $\epsilon > 0$, there exists a real number $\delta > 0$ such that for all real numbers x, if $a - \delta < x < a + \delta$ and $x \neq a$ then $L - \epsilon < f(x) < L + \epsilon$.

1. Write the statement formally using $\forall$ and $\exists$ quantifier. (4 points)

2. Write the negation formally. (6 points)