1. **[10 points]** Let n be an integer, $p(n)$ be the propositional function "n is prime" and $q(n)$ be the propositional function "n is even".

   (a) Express the following propositional statement in words: $\exists n > 2,\ q(n) \wedge p(n)$.

   (b) Negate the propositional statement, and express its negation in words. Simplify the statement as much as possible.

   (c) Which of the two statements is true?

2. **[10 points]** Let x be a positive real number. Use proof by contradiction to show that $\dfrac{x}{x+1} < \dfrac{x+1}{x+2}$.