Problem 1. For each statement below, (a) write the statement in symbolic logic, (b) write the negation of the statement in symbolic logic, and (c) write the negation of the statement in English.

(i) *If n is a natural number greater than one, then n is divisible by a prime number p.*

(ii) *For every positive real number ε, there is a positive real number δ with the property that $|f(x) - f(a)| < \varepsilon$ whenever $|x - a| < \delta$.*

(iii) For any vector $\vec{v}$, there exist real numbers $c_1, c_2, \ldots, c_n$ such that

$$\vec{v} = c_1\vec{e}_1 + c_2\vec{e}_2 + \cdots + c_n\vec{e}_n.$$

(iv) The set A is an element of the set X, but A is not an element of $\mathscr{P}(X)$.

Solution. □