Introduction to Abstract Mathematics   **Name:** _____

> The majority of the credit you receive will be based on the completeness and the clarity of your responses. **Show all of your work and justify your solutions as much as possible.**
> This is a 15 minute quiz and has 2 questions, for a total of 10 points

Let $D = \{(1, -1), (-3, 4), (0, -1), (1, 0)\}$ be a set, $P(x, y) : x^2 + y^2 = 1$ and $Q(x, y) : x + y = 1$ be open sentences over the domain D.

(5 points)   1. Find an element $(x, y) \in D$ so that $P(x, y) \Rightarrow Q(x, y)$ is false.

(5 points)   2. Negate the statement $\forall (x, y) \in D, P(x, y) \Rightarrow Q(x, y)$ and determine if it is true or false.