Math 325. Quiz #1

(1) State the definition of **rational number**.

(2) Write the *negation* of the following statement in simplified form:
"There exists a natural number x such that for every natural number y, $x^2 > y$."

(3) *True or false*, and *justify* with a short proof:
"Let r be a rational number and x be a real number. If x is irrational, then $x + r$ is irrational."