Reading Questions 1

page 7 : What May I Assume?

1. The product of nonzero real numbers is nonzero.
2. You must prove the previous statement if you want to use it in a proof.
3. All real numbers are irrational.
4. List 3 prime numbers which are greater than 5.

Section 0.1 Compound Statements (Part 1)

Mathematical Statements

P 1. Use the two following statements to create one compound statement.

P : The integer 3 is odd.

Q : The integer 57 is prime.

P 2. Use the next two statements to make one implication.

P : You earned an A on the final exam.

Q : You received an A for your final grade.

We will determine the truth value of an implication in the next section.

P 3. Sometimes the converse of an implication is easier to prove than the actual implication. Write the converse of the implication from the previous problem.

P 4. Use the following two statements to create a double implication.

P : The integer n is even.

Q : The integer n can be written as $2k + 1$ for some integer k.

Truth Values

P 5. The truth value of a statement in an implication may be determined by the truth value of the implication. Given that p and $p \to q$ are true, determine the truth value of q.

P 6. Given that $\neg p$ and $p \vee q$ are true, determine the truth value of q.