Section 1.8, Problem 32: Prove that there are infinitely many solutions in positive integers x, y, and z to the equation $x^2 + y^2 = z^2$. [Hint: Let $x = m^2 - n^2$, $y = 2mn$, and $z = m^2 + n^2$.] (Note that this method can be used to show thet there are infinitely many solutions in which x, y, and z do not have any common integer factor greater than 1.)

Section 2.2, Problem 40: The symmetric difference of A and B, $A \oplus B$, is the set $\{x | (x \in A) \oplus (x \in B)\}$, that is, elements of either A or B but not both. Determine whether symmetric difference is associative; that is, if A, B, and C are sets, does it follow that $A \oplus (B \oplus C) = (A \oplus B) \oplus C$?