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 that 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 $A \oplus (B \oplus C) = (A \oplus B) \oplus C$?