

Instructions

- Answer each question completely; justify your answers.
 - This assignment is due at 17:00 on Wednesday September 26th in Assignment Box #43.
1. Exercise 1.10.
 2. Exercise 1.16, parts (a), and (b).
 3. Let a , b , and c be integers such that $a^2 + b^2 = c^2$. Prove that at least one of a and b is even.
 4. Exercise 2.3.
 5. Exercise 2.7.
 6. Exercise 2.11, parts (b) and (d).
 7. Exercise 2.17.
 8. Define the sequence L_1, L_2, L_3, \dots by $L_1 = 1$, $L_2 = 3$, and $L_{n+2} = L_{n+1} + L_n \forall n \geq 1$. In this sequence, L_n is called the n^{th} Lucas number. Prove that every two consecutive Lucas numbers are relatively prime.