

Instructions

- Answer each question completely; justify your answers.
 - This assignment is due at 17:00 on Wednesday March 23rd in Assignment Box #44.
1. Exercise 5.1.4, part (g).
 2. Let $n \in \mathbb{N}$. Prove that $\sum_{i=1}^n i = \frac{n^2 + n}{2}$.
 3. Exercise 5.1.37, part (a).
 4. Exercise 5.2.20.
 5. Exercise 5.2.23.
 6. Consider the geometric sequence that begins as follows: $a_1 = 4$, $a_2 = -2$, $a_3 = 1$.
 - (a) What is the n^{th} term in this sequence?
 - (b) What is the sum of the first n terms of the sequence?
 - (c) What is the sum of the first 20 terms of the sequence?
 7. Exercise 5.2.33, parts (c) and (e).
 8. Exercise 5.2.37.
 9. Exercise 5.3.6.
 10. Exercise 5.3.11, part (a).
 11. Consider the sequence defined by $a_0 = 2$, $a_1 = 3$ and for each $n \geq 2$, $a_n = -a_{n-1} - a_{n-2}$. Determine a_n in general, and then use your solution to determine a_3 .
 12. Exercise 6.1.3.