1 Homework assignment no. 7, due on Friday, April 14

Problem 1. Book, problem 1 on page 123, parts (a), (c), (e)

Problem 2. Book, problem 2 on page 123, parts (a), (c), (d).

Problem 3. Book, problem 4 on page 123-124, all the parts except part (a). (NOTE: The result of part (e) is a true miracle. It says that the sum of the first \( n \) cubes is a perfect square. This is a truly amazing fact, and until today nobody understands very well why this happens. There is no parallel result for other sums of powers. There are formulas for the sum of the first \( n \) squares, the sum of the first \( n \) fourth powers, and so on, but they do not give anything special. The sum of the first \( n \) cubes seems to be the only one that has this surprising property.)

Problem 4. Book, problem 5 on page 124, parts (a), (c), (d), (e), (h), (n). (NOTE: Part (q) is done in detail in the notes.)