4. In this question you may assume the results for

$$\sum_{r=1}^{n} r^3 \;, \; \sum_{r=1}^{n} r^2 \; \text{ and } \; \sum_{r=1}^{n} r$$

(a) Show that the sum of the cubes of the first n positive odd numbers is

$$n^2(2n^2 - 1)$$

(5)

The sum of the cubes of 10 consecutive positive odd numbers is 99 800

(b) Use the answer to part (a) to determine the smallest of these 10 consecutive positive odd numbers.

(4)