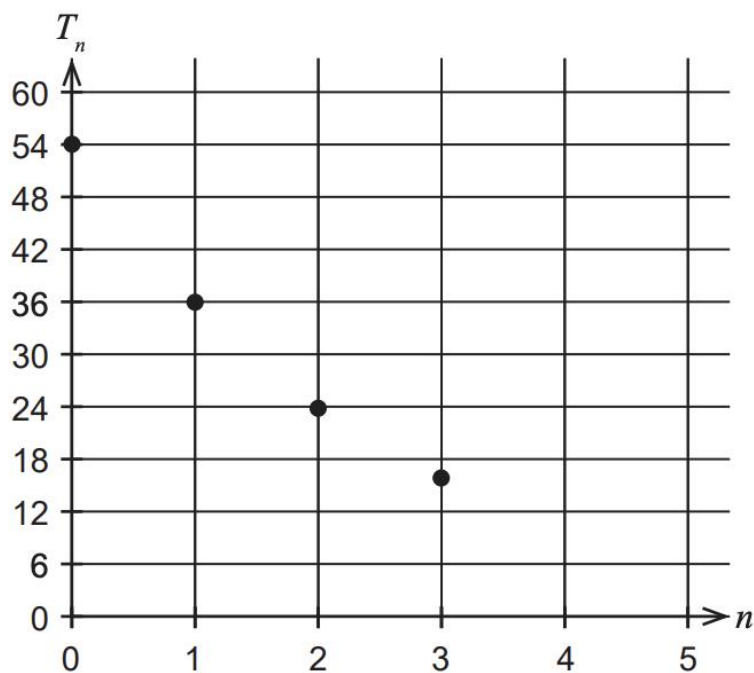


Question 7**(6 marks)**

A researcher compared the performance of various golf balls. The graph below shows the height reached above the ground by a particular golf ball after each of the first three bounces. It was initially dropped from a height of 54 cm.



(a) Write the recursive rule for this sequence. (3 marks)

(b) Write the rule for the n^{th} term of this sequence. (1 mark)

- (c) Show that the height reached by the golf ball above the ground after the fifth bounce is $\frac{64}{9}$ cm. (2 marks)