Subject 04 **SEQUENCES**

Please do not write on this exam paper and give it back at the end of the test

THE NEW YORK MARATHON

David is getting ready for the New York Marathon (42.195km) which is to be held on the first Sunday in November.
He runs 10km every day in August. From September 1st onwards, he runs daily 0.8km more than the day before.
Let us call d_n the distance travelled each day, with $n=0$ on August 31st, $n=1$ on September 1st, $n=2$ on September 2nd and so on.

1. Compute the first five terms of sequence (d_n)
2. Express d_{n+1} in terms of d_n
3.Calculate the distance run on September 30th
4. On what day does David run 42 km?