

- 8** **(a)** A cyclist completes a long-distance charity event across Africa. The total distance is 3050 km. He starts the event on May 1st and cycles 200 km on that day. On each subsequent day he reduces the distance cycled by 5 km.
- (i)** How far will he travel on May 15th? [2]
- (ii)** On what date will he finish the event? [3]
- (b)** A geometric progression is such that the third term is 8 times the sixth term, and the sum of the first six terms is $31\frac{1}{2}$. Find
- (i)** the first term of the progression, [4]
- (ii)** the sum to infinity of the progression. [1]