

- 10 (a)** A circle is divided into 6 sectors in such a way that the angles of the sectors are in arithmetic progression. The angle of the largest sector is 4 times the angle of the smallest sector. Given that the radius of the circle is 5 cm, find the perimeter of the smallest sector. [6]
- (b)** The first, second and third terms of a geometric progression are $2k + 3$, $k + 6$ and k , respectively. Given that all the terms of the geometric progression are positive, calculate
- (i)** the value of the constant k , [3]
 - (ii)** the sum to infinity of the progression. [2]