

1.19 (a) $\frac{1}{2}$ (0.5) (A1) (C1)
[1 mark]

(b) $18 \times \left(\frac{1}{2}\right)^4$ (M1)

Note: Award (M1) for their correct substitution into the geometric sequence formula.
Accept a list of their five correct terms.

$1.125 \left(1.13, \frac{9}{8}\right)$ (A1)(ft) (C2)

Note: Follow through from their common ratio from part (a).

[2 marks]

(c) $18 \times \left(\frac{1}{2}\right)^{n-1} < 10^{-3}$ (M1)(M1)

Notes: Award (M1) for their correct substitution into the geometric sequence formula with a variable in the exponent, (M1) for comparing their expression with $10^{-3} \left(\frac{1}{1000}\right)$.
Accept an equation.

$n = 16$ (A1)(ft) (C3)

Note: Follow through from their common ratio from part (a). "n" must be a positive integer for the (A1) to be awarded.

[3 marks]

Total [6 marks]