



1. The first 3 terms of a geometric sequence are  $u_1 = 0.70$ ,  $u_2 = 0.14$ ,  $u_3 = 0.028$
- (a) Find the value of  $r$  (2 marks)
  - (b) Find the value of  $S_7$  (2 marks)
  - (c) Find the infinite sum of this geometric series (2 marks)

Mark scheme:

$$(a) r = \frac{.028}{.14} = \frac{.14}{.7} \quad (M1)$$

$$r = 0.2 \quad (A1)$$

$$(b) S_7 = \frac{.7(2^7-1)}{.2-1} \quad (M1)$$

$$S_7 = 0.874989 \dots \quad (A1)$$

$$(c) S = \frac{.7}{1-0.2} \quad (M1)$$

$$S = 0.875 \quad (A1)$$