3.5 Solutions to 3.4 Exercise

A-Level Pure Mathematics, Year 2
Geometric Progressions

Answer 1 **Answer 2** **Answer 3**

8 $-\frac{2}{3}$ $r = -\frac{1}{2}$ $a = 12$

[2, 3, 4 marks]

Answer 4

(a) $\frac{a r^5}{a r^2} = \frac{96}{324}$

$r^3 = \frac{8}{27}$

$r = \frac{2}{3}$

(b) 729 **(c)** 2182 **(d)** 2187

[2, 2, 3, 2 marks]

Answer 5

(a) See Lesson 2 notes & video

(b) 204 600 **(c)** $\frac{5}{4}$ **(d)** $-1 < r < 1$

[4, 3, 3, 1 marks]

Answer 6

(i) $\frac{k}{k+4} = \frac{2k-15}{k}$

$k^2 = (2k-15)(k+4)$

$k^2 = 2k^2 + 8k - 15k - 60$

$k^2 - 7k - 60 = 0$ □

(ii) $(k-12)(k+5) = 0$

$\therefore k = 12$ □ Reject $k = -5$ as told k is a positive constant

(iii) 0.75

(iv) 64

[4, 2, 1, 2 marks]

Answer 7

(a) 0.9

(b) 8

(c) 79.582

(d) 0.412

[2, 2, 2, 2 marks]