- 1 (a) A geometric progression starts
- 4 16

Work out the next term.

[1 mark]

Answer

64

2 The first three terms of a geometric progression are

$$\frac{2}{3}$$
 $\frac{4}{9}$ $\frac{8}{27}$

Circle the fourth term.

[1 mark]

$$\frac{10}{81}$$

$$\frac{14}{81}$$



3 A is an arithmetic progression.

Here are the first four terms.

13

16

19

22

G is a **geometric** progression.

Here are the first four terms.

2

4

8

16

nth term of A = 8th term of G

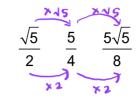
Work out the value of n.

[4 marks]

$$A : A = 13, d = 3$$

$$256 = 13 + (n-1)3$$

4 (a) The first three terms of a geometric progression are



Work out the next term.

4th term =
$$\frac{5\sqrt{5}(\sqrt{5})}{8\times2} = \frac{5(5)}{16}$$

[1 mark]

4 (b) The *n*th term of a sequence is $(2 \pm \sqrt{3})^n$

Show that the third term is $26 + 15\sqrt{3}$

[3 marks]

$$T_{3} = (2+\sqrt{3})^{3}$$

$$= (2+\sqrt{3})(2+\sqrt{3})(2+\sqrt{3})$$

$$= (4+4\sqrt{3}+3)(2+\sqrt{3}) / (1)$$

$$= (7+4\sqrt{3})(2+\sqrt{3}) / (1)$$

$$= 14+7\sqrt{3}+8\sqrt{3}+4(3)$$

$$= 14+12+15\sqrt{3} / (1)$$

$$= 26+15\sqrt{3} / (5hown)$$