

Geometric Sequences

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Date _____ Period _____

State if each sequence is geometric.

1) 5, 4, 3, 2, ...

2) 9, 11, 14, 18, ...

3) 1, -1, -3, -5, ...

4) -5, 4, 13, 22, ...

5) 2, 4, 12, 48, ...

6) 1, 9, 25, 49, ...

Find the common ratio.

7) 3, 6, 12, 24, ...

8) -4, -12, -36, -108, ...

9) -2, -4, -8, -16, ...

10) 2, -6, 18, -54, ...

11) -1, -2, -4, -8, ...

12) 4, -16, 64, -256, ...

Find the three terms in the sequence after the last one given.

13) -3, -6, -12, -24, ...

14) 1, 5, 25, 125, ...

15) $-4, 8, -16, 32, \dots$

16) $2, 6, 18, 54, \dots$

Find the 8th term.

17) $1, -4, 16, -64, \dots$

18) $3, 15, 75, 375, \dots$

Find the term named in the problem.

19) $1, -3, 9, -27, \dots$

Find a_{12}

20) $4, -8, 16, -32, \dots$

Find a_{11}

Find the explicit formula.

21) $4, 24, 144, 864, \dots$

22) $2, 10, 50, 250, \dots$

23) $-1, -2, -4, -8, \dots$

24) $1, 6, 36, 216, \dots$

Find the recursive formula.

25) $-2, -4, -8, -16, \dots$

26) $4, 8, 16, 32, \dots$

27) $-1, -3, -9, -27, \dots$

28) $3, 6, 12, 24, \dots$

Geometric Sequences

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Date _____ Period _____

State if each sequence is geometric.

1) 5, 4, 3, 2, ...

No

2) 9, 11, 14, 18, ...

No

3) 1, -1, -3, -5, ...

No

4) -5, 4, 13, 22, ...

No

5) 2, 4, 12, 48, ...

No

6) 1, 9, 25, 49, ...

No

Find the common ratio.

7) 3, 6, 12, 24, ...

$r = 2$

8) -4, -12, -36, -108, ...

$r = 3$

9) -2, -4, -8, -16, ...

$r = 2$

10) 2, -6, 18, -54, ...

$r = -3$

11) -1, -2, -4, -8, ...

$r = 2$

12) 4, -16, 64, -256, ...

$r = -4$

Find the three terms in the sequence after the last one given.

13) -3, -6, -12, -24, ...

$-48, -96, -192$

14) 1, 5, 25, 125, ...

$625, 3125, 15625$

15) $-4, 8, -16, 32, \dots$

$$-64, 128, -256$$

16) $2, 6, 18, 54, \dots$

$$162, 486, 1458$$

Find the 8th term.

17) $1, -4, 16, -64, \dots$

$$a_8 = -16384$$

18) $3, 15, 75, 375, \dots$

$$a_8 = 234375$$

Find the term named in the problem.

19) $1, -3, 9, -27, \dots$

Find a_{12}

$$a_{12} = -177147$$

20) $4, -8, 16, -32, \dots$

Find a_{11}

$$a_{11} = 4096$$

Find the explicit formula.

21) $4, 24, 144, 864, \dots$

$$a_n = 4 \cdot 6^{n-1}$$

22) $2, 10, 50, 250, \dots$

$$a_n = 2 \cdot 5^{n-1}$$

23) $-1, -2, -4, -8, \dots$

$$a_n = -2^{n-1}$$

24) $1, 6, 36, 216, \dots$

$$a_n = 6^{n-1}$$

Find the recursive formula.

25) $-2, -4, -8, -16, \dots$

$$a_n = a_{n-1} \cdot 2$$

$$a_1 = -2$$

26) $4, 8, 16, 32, \dots$

$$a_n = a_{n-1} \cdot 2$$

$$a_1 = 4$$

27) $-1, -3, -9, -27, \dots$

$$a_n = a_{n-1} \cdot 3$$

$$a_1 = -1$$

28) $3, 6, 12, 24, \dots$

$$a_n = a_{n-1} \cdot 2$$

$$a_1 = 3$$