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Geometric Sequences Quiz PDF

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Which of the following sequences is a geometric sequence?

◯ 2, 4, 8, 16
◯ 1, 3, 6, 10
◯ 5, 10, 15, 20
◯ 7, 14, 21, 28

Which formula represents the n-th term of a geometric sequence?

◯ $a\_n = a\_1 + (n-1)d$
◯ $a\_n = a\_1 × r^{(n-1)}$
◯ $a\_n = a\_1 × n$
◯ $a\_n = a\_1 + r$

If the first term of a geometric sequence is 5 and the common ratio is 2, what is the third term?

◯ 10
◯ 15
◯ 20
◯ 25

Describe a real-world scenario where a geometric sequence might be used.

Calculate the fifth term of a geometric sequence where the first term is 3 and the common ratio is 4.

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How does the common ratio affect the behavior of a geometric sequence? Provide examples.

If the sum of the first three terms of a geometric sequence is 21 and the common ratio is 2, what is the first term?

Discuss the conditions under which an infinite geometric series converges and provide an example.

What is the sum of the first three terms of the geometric sequence 2, 6, 18?

○ 24

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○ 26
○ 28
○ 30

In a geometric sequence, if the first term is 8 and the common ratio is -2, what is the second term?

○ -8
○ 16
○ -16
○ 4

If a geometric sequence has a common ratio of 0.5, what type of sequence is it?

○ Increasing
○ Decreasing
○ Constant
○ Alternating

Which of the following sequences are geometric?

☐ 1, 2, 4, 8
☐ 3, 6, 12, 24
☐ 5, 10, 15, 20
☐ 7, 14, 28, 56

What is the common ratio of the sequence 100, 50, 25, 12.5?

○ 0.25
○ 0.5
○ 2
○ 4

In a geometric sequence, which of the following can be true if the common ratio is negative?

☐ The sequence is increasing.
☐ The sequence is decreasing.
☐ The sequence terms alternate in sign.
☐ The sequence is constant.

Explain how you would determine if a given sequence is geometric.

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What are possible values for the common ratio in a geometric sequence?

☐ Greater than 1
☐ Less than 1
☐ Equal to 1
☐ Negative

What is the common ratio in the geometric sequence 3, 9, 27, 81?

○ 2
○ 3
○ 4
○ 5

Which of the following are applications of geometric sequences?

☐ Calculating compound interest
☐ Linear regression analysis
☐ Population growth models
☐ Arithmetic progression

Which statements are true about the sum of an infinite geometric series?

☐ It converges if the common ratio is greater than 1.
☐ It converges if the common ratio is less than 1.
☐ It diverges if the common ratio is equal to 1.
☐ It converges if the absolute value of the common ratio is less than 1.

Which of the following are properties of a geometric sequence?

☐ Each term is obtained by adding a constant to the previous term.
☐ Each term is obtained by multiplying the previous term by a constant.
☐ The ratio between consecutive terms is constant.

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☐ The difference between consecutive terms is constant.

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