

Pre-AP Pre-Cal
Geometric Sequence and Series

Name _____

Date _____

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| <p>1. In a geometric progression, the first term is 2 and the common ratio is -3. State the next 3 terms.</p>

<p>2. Find the common ratio and the next 2 terms for the geometric sequence $25, -5, 1, \dots$</p>

<p>3. What is the 9th term of the geometric progression $729, -243, \dots$?</p>

<p>4. In a geometric progression, the first term is 100 and the common ratio is $\frac{1}{2}$. Find the 12th term.</p>

<p>5. Write the first 4 terms of the geometric sequence whose 5th term is 6 and whose common ratio is $\frac{2}{3}$.</p> | <p>6. Find the first term in a geometric progression whose common ratio is -2 and whose 7th term is 320.</p>

<p>7. In a geometric progression, the 6th term is $\frac{5}{54}$ and the 8th term is $\frac{10}{243}$. Find the first 3 terms.</p>

<p>8. Which term is 768 in the geometric progression $\frac{3}{16}, -\frac{3}{4}, 3, \dots$?</p>

<p>9. In a geometric progression, the first term is 450, the nth term is 18, and the common ratio is $\frac{1}{5}$. Find the value of n.</p> |
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10. If k , 6, and 10 are consecutive terms of a geometric sequence, find the value of k .

11. Find the sum of the geometric series $4 + 2 + 1 + \cdots + \frac{1}{16}$.

12. Find the sum of the geometric series $\frac{1}{125} + \frac{1}{25} + \frac{1}{5} + \cdots + 25$.

13. In a geometric progression, the first term is 6 and the common ratio is 2. Find the sum of the first 6 terms.

14. Find the sum of the first 7 terms of the geometric series $224 + (-112) + 56 + \cdots$.

Find the sum, if it exists.

15. $\frac{1}{9} + \frac{1}{3} + 1 + 3 + \cdots$

16. $6 + 1 + \frac{1}{6} + \cdots$

17. $-\frac{1}{5} + \frac{1}{25} + \left(-\frac{1}{125}\right) + \cdots$

18. $\frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \cdots$

Answer List

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|---|--|------------------------|
| 1. $-6, 18, -54$ | 2. $r = -\frac{1}{5}; -\frac{1}{5}, \frac{1}{25}$ | 3. $\frac{1}{9}$ |
| 4. $\frac{25}{512}$ | 5. $\frac{729}{16}, \frac{243}{8}, \frac{81}{4}, \frac{27}{2}$ | 6. 5 |
| 7. $\frac{45}{64}, \frac{15}{32}, \frac{5}{16}$ or $-\frac{45}{64}, \frac{15}{32}, -\frac{5}{16}$ | 8. 7th | 9. 3 |
| 10. 3.6 | 11. $7\frac{15}{16}$ | 12. $31\frac{31}{125}$ |
| 13. 378 | 14. 150.5 | 15. no sum |
| 16. 7.2 | 17. $-\frac{1}{6}$ | 18. no sum |

Catalog List

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|-----------------|-----------------|-----------------|
| 1. TRI LH 1 | 2. TRI LH 5 | 3. TRI LH 21 |
| 4. TRI LH 25 | 5. TRI LH 41 | 6. TRI LH 47 |
| 7. TRI LH 57 | 8. TRI LH 68 | 9. TRI LH 70 |
| 10. TRI LH 79 | 11. TRI LI 1 | 12. TRI LI 3 |
| 13. TRI LI 18 | 14. TRI LI 32 | 15. TRI LK 27 |
| 16. TRI LK 1 | 17. TRI LK 32 | 18. TRI LK 19 |