

Algebra II
Sequence 3

Name _____

Tell whether the following sequences are geometric. If so, state the common ratio.

1. 96, 48, 24, 12, 6, ...
2. 2, 4, 6, 8, 10, ...
3. 0.2, 3.2, -12.8, 51.2, -204.8, ...
4. 0.3, -1.5, 7.5, -37.5, 187.5, ...
5. $\frac{1}{2}, \frac{1}{6}, \frac{1}{18}, \frac{1}{54}, \dots$

Find the formula for the nth term of the sequence. Then find a_7

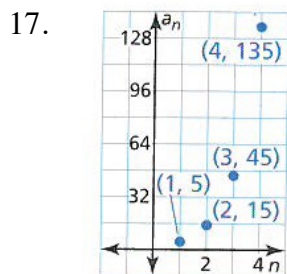
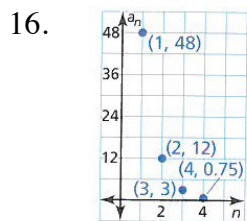
6. 4, 20, 100, 500, ...
7. 375, 75, 15, 3, ...
8. 1.3, -3.9, 11.7, -35.1, ...
9. $a_3 = 15, r = 0.5$
10. $a_4 = -192, r = 4$
11. $a_2 = 28$ and $a_5 = 1792$
12. $a_2 = -72$ and $a_6 = -\frac{1}{18}$

Find the following sums.

13. $\sum_{n=1}^{10} 4\left(\frac{3}{4}\right)^{n-1}$
14. $\sum_{k=1}^8 8\left(-\frac{2}{3}\right)^{k-1}$

15. Find the sum of the first 9 terms of the geometric series $-14 + -42 + -126 + \dots$

Write a generating function for the following sequences.



18.

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|-------|---|---|---|----|----|
| n | 3 | 4 | 5 | 6 | 7 |
| a_n | 2 | 5 | 8 | 11 | 14 |