

10-3 Worksheet #2

Geometric Sequences and Series

Find the value of a_n for each geometric sequence.

1. $a_1 = 5, r = 3, n = 6$

2. $a_1 = 20, r = -3, n = 6$

3. $a_1 = -4, r = -2, n = 10$

4. a_8 for $-\frac{1}{250}, -\frac{1}{50}, -\frac{1}{10}, \dots$

5. a_{12} for 96, 48, 24, ...

6. $a_1 = 8, r = \frac{1}{2}, n = 9$

7. $a_1 = -3125, r = -\frac{1}{5}, n = 9$

8. $a_1 = 3, r = \frac{1}{10}, n = 8$

Write an equation for the n th term of each geometric sequence.

9. 1, 4, 16, ...

10. -1, -5, -25, ...

11. $1, \frac{1}{2}, \frac{1}{4}, \dots$

12. -3, -6, -12, ...

Find the sum of each geometric series.

$$13. \sum_{k=3}^{10} (-4)(-2)^{k-1}$$

$$14. \sum_{k=1}^8 (-3)(3)^{k-1}$$

$$15. \sum_{k=2}^{32} 9(-1)^{k-1}$$

Find the sum of each geometric series.

$$16. a_1 = 240, r = \frac{3}{4}, n = 7$$

$$17. a_1 = 360, r = \frac{4}{3}, n = 8$$

18. Natalie is handing out fliers to advertise the next student council meeting. She hands out fliers to 4 people. Then each of those 4 people hand out 4 fliers to 4 other people. Those 4 then hand out 4 fliers to 4 new people. If Natalie is considered the first round, how many people will have been given fliers after 4 rounds.