

Find the next three terms of each geometric sequence. Then write the recursive and explicit formulas for the sequence. Make sure you determine which is which.

1. 2, -10, 50, ...

Next Three Terms: _____

Recursive: _____

Explicit: _____

5. -6, -42, -294, ...

Next Three Terms: _____

Recursive: _____

Explicit: _____

2. 36, 12, 4, ...

Next Three Terms: _____

Recursive: _____

Explicit: _____

6. 1024, -128, 16, ...

Next Three Terms: _____

Recursive: _____

Explicit: _____

3. $\frac{1}{5}, \frac{3}{10}, \frac{2}{5}, \frac{1}{2}, \dots$

Next Three Terms: _____

Recursive: _____

Explicit: _____

7. $\frac{1}{3}, \frac{2}{9}, \frac{4}{27}, \frac{8}{81}, \dots$

Next Three Terms: _____

Recursive: _____

Explicit: _____

4. 400, 100, 25, ...

Next Three Terms: _____

Recursive: _____

Explicit: _____

8. $\frac{3}{5}, \frac{3}{10}, \frac{3}{20}, \frac{3}{40}, \dots$

Next Three Terms: _____

Recursive: _____

Explicit: _____

9. Find the first five terms of the geometric sequence defined as follows: $a_n = 5[a_{n-1}]$; $a_0 = -3$

10. Find the first five terms of the geometric sequence defined as follows: $a_n = \frac{2}{3}[a_{n-1}]$; $a_0 = 2$

11. Jade is training for a marathon. During her first week of training, each run she completes is 90 minutes long. She increases the length of each run by 10% each week. Write the explicit and recursive formulas to represent the length of her run after n weeks. Be sure you say which formula is which.
12. **BONUS:** Nigel is participating in a read-a-thon. The number of pages he reads each night follows a geometric sequence. On the second day of the read-a-thon, Nigel read 8 pages. On the fifth day of the read-a-thon, he read 64 pages. Write an explicit formula to represent this scenario.

#13-18: Determine if each sequence is arithmetic, geometric, or neither. If it is arithmetic or geometric, write an explicit, and a recursive formula.

13. 4, 1, 2, 0, ...

14. 10, 20, 30, 40, ...

15. 4, 20, 100, 500, ...

16. 212, 106, 53, 26.5, ...

17. -10, -8, -6, -4, ...

18. 5, -10, 20, 40, ...

19. The first term of a geometric sequence is 1 and the common ratio is 9. What is the 8th term of the sequence?
20. The first term of a geometric sequence is 2 and the common ratio is 4. What is the 14th term of the sequence?
21. At an online mapping site, Mr. Mosley notices that when he clicks to zoom in on a map the magnification increases by 20% each time.
- If Mr. Mosley is looking at something that is initially 1 inch on his computer screen, write a formula that represents the magnification of the n th zoom level. (Hint: the common ratio is not 0.2)
 - What is the fourth term of this sequence? What does it represent?