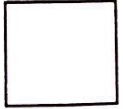


Name: \_\_\_\_\_

Unit 6: Exponents & Exponential Functions



Date: \_\_\_\_\_ Bell: \_\_\_\_\_

Homework 9: Geometric Sequences

**Determine whether each sequence is a geometric sequence.  
If yes, identify the common ratio.**

1. 4, 12, 36, 108, ...

2. 5, 10, 15, 20, ...

3. 120, -60, 30, -15, ...

4. 1, -4, 16, -64, ...

5. 50, 35, 20, ...

6. 625, 125, 25, 5, ...

**Find the next three terms of each geometric sequence.**

7. 4, 8, 16, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

8. 1, -6, 36, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

9. 486, 162, 54, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

10. 3, 15, 75, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

11. 240, -120, 60, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

12. -5, -20, -80, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**Write an equation to find the  $n$ th term of each sequence. Then find  $a_n$ .**

13. 5, 20, 80, ...

14. -2, 10, -50, ...

15. -65536, 16384, -4096, ...

16. 6, -18, 54, ...

17. 1536, 768, 384, ...

18. -1, -7, -49, ...

**A ball is dropped from a height of 500 meters. The table shows the height of each bounce.**

Bounce	Height (m)
1	400
2	320
3	256

19. Write a rule to represent the height of the ball after each bounce.

20. How high does the ball bounce on the 6<sup>th</sup> bounce?