

Name \_\_\_\_\_ Date \_\_\_\_\_ Pd \_\_\_\_\_

**6.5 – 6.7 Review Packet**

*1 – 6: Solve the equation. Show all your work for full credit. Box your final answer.*

1.  $2^{4x} = 2^{x+9}$

2.  $3^x = 243$

3.  $7^{x-5} = 49^x$

4.  $27^x = 9^{x-2}$

5.  $\left(\frac{1}{5}\right)^x = 125$

6.  $3^{4x-9} = \frac{1}{81}$

7 – 8: Find the common ratio of the geometric series. Box your final answer.

7. 4, 12, 36, 108, ...

8. 36, -6,  $1, \frac{1}{6}, \dots$

9 – 10: Determine if the sequence is geometric, arithmetic, or neither. Justify your answer.

9. -8, 0, 8, 16, ...

10. 9, 14, 20, 27, ...

11 – 12: Write the next three terms of the geometric sequence. Show your work.

11. 5, 20, 80, 320, ...

12. 81, -27, 9, -3, ...

13 – 14: Write an equation for the  $n$ th term. Then find  $a_6$ . Show your work to earn credit for both answers.

13. 32, 8, 2, ...

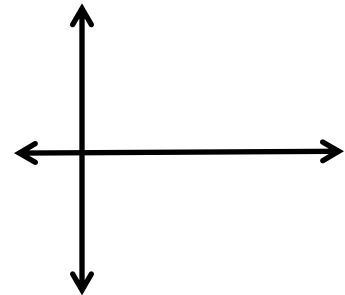
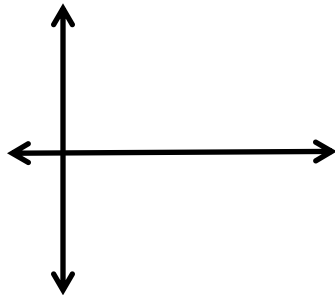
14. 0.6, -3, 15, -75, ...

15. Determine whether the recursive rule represents an arithmetic sequence or a geometric sequence.  $a_1 = 18, a_n = a_{n-1} + 1$

16 – 17: Write the first six terms of the sequence. Then graph the sequence.

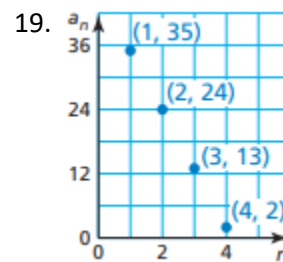
16.  $a_1 = 10, a_n = a_{n-1} - 5$

17.  $a_1 = -7, a_n = -4a_{n-1}$



18 – 19: Write a recursive rule for the sequence.

18. 3, 11, 19, 27, 35, ...



20 – 21: Write an explicit rule for the recursive rule.

20.  $a_1 = 8, a_n = a_{n-1} - 12$

21.  $a_1 = 5, a_n = -5a_{n-1}$

21. Write a recursive rule for the explicit rule.

$a_n = 6n - 20$