

NAME: _____

HW 9.5

DATE: _____

ALGEBRA

1 – 4 Predict the next term of the sequence.

1. 14, 24, 34, 44, 54...

2. 3, 9, 27, 81, 243...

3. 2, 4, 12, 48, 240...

4. 1, 3, 6, 10, 15...

5 – 8 Is each of the following a geometric sequence?

5. 1, 3, 9, 15, 45...

6. 2, 4, 16, 256...

7. 2, -4, 8, -16...

8. 7, 21, 35, 49...

9 – 11 Write out the first five terms of the described geometric sequence.

9. the first term is -3 and the common ratio is -2

10. $a_4 = 512$, $r = 2$

11. $a_1 = 5$ and $a_n = 3a_{n-1}$

12 – 15 For each of the following sequences, find the common ratio, r , and find the general rule and simplify to the explicit formula.

12. 1, -3 , 9, -27 ...

13. 9, 3, $1, \frac{1}{3}$...

14. $2.5, 5, 10, 20 \dots$

15. $-160, 80, -40, 20 \dots$

16. Given the geometric sequence $2, x_2, x_3, 250 \dots$

- a. Find the common ratio.
- b. Find the missing terms.
- c. Find the 5th term.

17. Given the geometric sequence $3, x_2, x_3, -24 \dots$

- a. Find r , the common ratio.
- b. Find the missing terms.
- c. Find the 6th term.

18. If $a_1 = -1$ and $a_n = -2a_{n-1}$,
- Find the common ratio.
 - Find the general rule for a_n and simplify to the explicit formula.
 - Find the 10th term.
19. Find the 12th term of the geometric sequence: 4, 12, 36, 108...
20. A ball is dropped from a height of 100 feet and bounces up nine-tenths of its previous height after each bounce. After the 8th bounce, the height of the ball will be approximately how many feet (round to a whole number)?