Name:	Class:
Topic:	Date:

Main Ideas/Questions	Notes
Geometric Sequences	
Common Ratio	
Identifying a Geometric Sequence	**Determine whether the following represent geometric sequences. If yes, identify the common ratio.** **1.** 2, 10, 50, 250, ... **2.** 135, 45, 15, 5, ... **3.** 6, 18, 24, 30, ... **4.** 7, -14, 28, -56, ... **5.** 80, -40, 20, -10, ... **6.** -9, -36, -144, -576, ...
Continuing Geometric Sequences	**Given the geometric sequence, find the next three terms.** **7.** 7, -21, 63, _____, _____, _____ **8.** 3072, 768, 192, _____, _____, _____ **9.** 8, 4, 2, _____, _____, _____ **10.** -5, -25, -125, _____, _____, _____
Geometric Sequence Formula	**The n^{th} term of a geometric sequence can be found using the following formula:**
Examples	**Write the rule for the nth term, then find a_7.** **11.** 3, 9, 27, ... **12.** -4, 20, -100, ...

13. 400, 200, 100, ...

14. 1, 5, 25, ...

15. -1, -4, -16, ...

16. 729, -243, 81, ...

17. 6, -12, 24, ...

18. 8, 12, 18, ...

Application

Year	Value ($)
1	10,000
2	8,000
3	6,400

The table to the left shows a car's value for 3 years after it is purchased.

19. Write a rule to represent the car's depreciation.

20. What will be the value of the car after 10 years?

Summary: _____

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 nth term of each sequence. Then find a_9

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 6th bounce?