

Algebra I

Name: _____

Date: _____

Hour: _____

Homework 2.1

Explain how to find the rule for each of the following sequences.

1.) 10, 20, 40, 80, 160...

2.) 20, 10, 5, 2.5, 1.25...

3.) 10, 20, 30, 40, 50...

4.) 160, 140, 120, 100, 80...

5.) How can you tell if any of the sequences in numbers 1-4 are exponential?
Which numbers from 1-4 are exponential?

6.) Describe the characteristic of a linear sequence. Which of the sequences in 1-4 are linear?

What are the next three terms of each sequence?

7.) 100, 300, 900, 2700, 8100, _____, _____, _____.

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8.) 100, 300, 500, 700, 900, _____, _____, _____.

9.) 100, 10, 1, 0.1, 0.01, _____, _____, _____.

10.) 40, 35, 25, 20, _____, _____, _____.

11.) Which of the sequences in 7-10 show exponential growth?

12.) Which of the sequences in 7- 10 are linear?

13.) Is this sequence $64, 16, 4, \frac{1}{4}, \dots$ linear or exponential?

Suppose a ball bounces $\frac{1}{2}$ its previous height on each bounce. Find the height the ball bounces on the...

14.) second bounce

15.) third bounce

16.) fourth bounce

17.) fifth bounce

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18.) Write a sequence starting with 1 which triples the previous number.

1, _____, _____, _____, _____, ...

19.) Is the sequence 100, 90, 80, 70, 60, ... linear or exponential?

Write the rule used to find the next term in each pattern. Find the missing terms.

20.) 3, 7, 11, 15, 19, _____, _____.

21.) 4, 2, 1, $\frac{1}{2}$, $\frac{1}{4}$, _____, _____.

22.) 33, 30, 27, 24, 21, _____, _____.

23.) 10, 21, 34, 49, 66, _____, _____.

24.) 99, 78, 72, 51, 45, _____, _____.

