

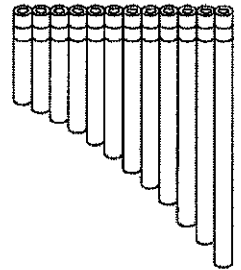
Algebra II

Geometric Sequences

Name _____

Hour _____

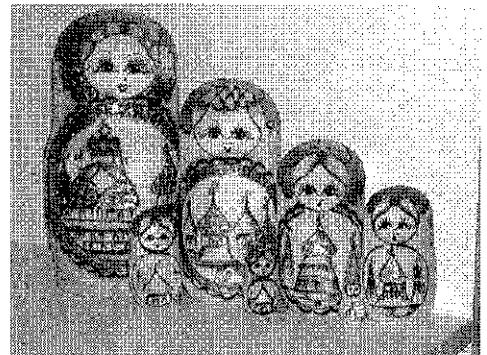
- 1) Debbie wants to make a pan flute out of 12 bamboo pipes, similar to the one shown at the right. She wants the shortest pipe to be 10 cm long and each succeeding pipe to be 6% longer than the one before it.



- a) If Debbie is to get all 12 pieces from a single bamboo stalk, what is the stalk's minimum length?

- b) Write a general sequence for the length of each pipe.

- 2) In a set of 10 Russian nesting dolls, each doll is $(5/6)$ the height of the taller one. You measure the height of the first (largest) doll to be 15 centimeters.



- a) What is the height of the 7th doll?

- b) Write a general sequence for the height of each doll.

- c) What is the total height of the ten dolls?

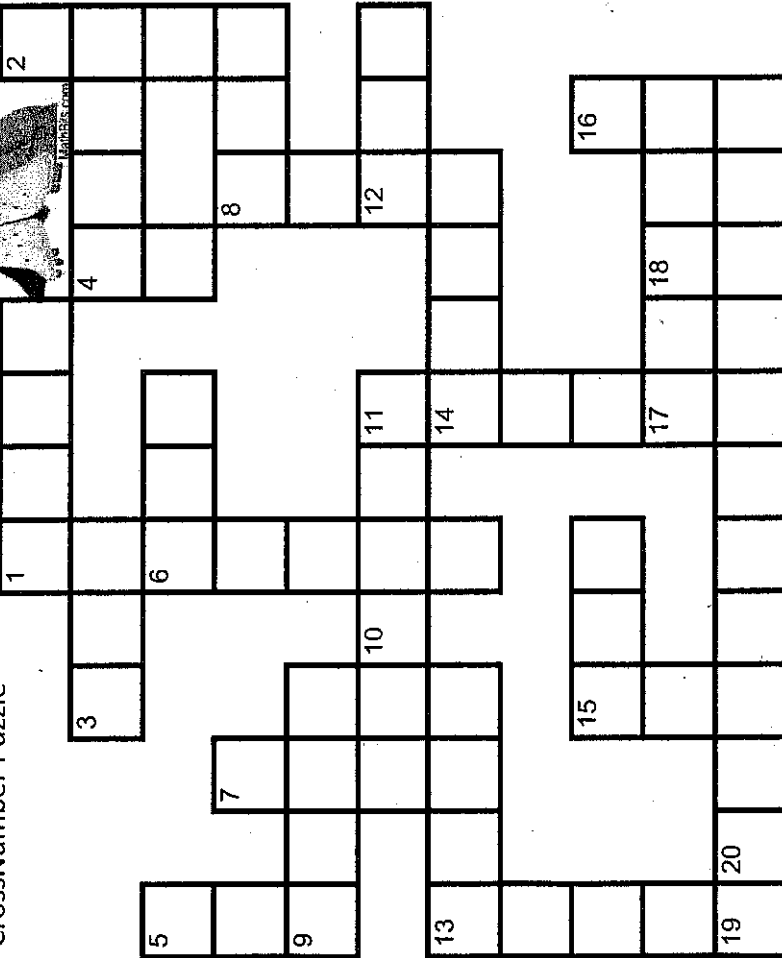
Sequence Shoozing

CrossNumber Puzzle



Across

Name _____



- 1 Find the sum of the first 27 terms of the sequence $-8, -4, 0, \dots$
- 3 What is the 42nd term of the sequence $2, 9, 16, \dots$
- 4 Find the 200th term of the sequence $2, 9, 16, \dots$
- 6 Find the sum of the first 6 terms of the sequence $5, 10, 20, \dots$
- 8 Let $a_n = 4n^2$. Find the sum of the first 5 terms.
- 9 If $a^m = a^{l+2+4+8+\dots+2048}$, find m .
- 10 Find $\sum_{n=1}^8 (2^{n+1} + 3)$.
- 12 Find the sum $6 + 12 + 18 + 24 + \dots + 72$.
- 13 Find the sum of the first 25 terms of the sequence $11, 14, 17, \dots$
- 14 Find the sum of the first 25 terms of the sequence $16, 28, 40, \dots$
- 15 Find $2 \cdot \sum_{n=1}^3 (2n+1)^{n-1}$.
- 17 Find the 6th term of the sequence $248, 744, 2232, \dots$
- 19 Find the sum of 10 terms of the geometric sequence $3, 18, 108, \dots$

Down

- 1 You start your 30 year career at a salary of \$50,000 and receive yearly raises of \$1,000. How much money will you have earned, in total, over the 30 years?
- 2 Find the sum of the sequence, $52, 56, 60, \dots, 148$.
- 4 Find the number of terms in the sequence $4, 7, 10, \dots, 49$.
- 5 Find the sum of the first 6 terms of the sequence $1, 3, 9, 27, \dots$
- 7 $a_l = 3$; $a_{l+1} = 3a_l + 18$. Find a_6
- 8 A lecture hall has 20 seats in the first row, 24 in the second row, 28 in the third row, and so on for 30 rows. How many seats are in the lecture hall?
- 11 Find the sum of 11 terms of the sequence $5, 15, 45, \dots$
- 13 Find the 10th term of the sequence $1, 3, 9, \dots$
- 15 The first term of an arithmetic sequence is 5. The 17th term is 53. Find the 35th term.
- 16 Find $\sum_{n=3}^7 2^n$.
- 18 Find the 100th term of the sequence $1, 4, 7, 10, \dots$
- 20 Find the sum of the first 25 positive even integers.