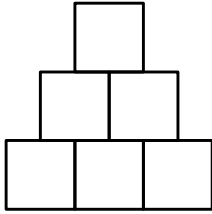


Week-In-Review 1 on sections 1.1 – 1.3

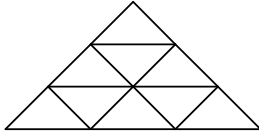
1. Give the first four terms and the a_n th term of a nontrivial geometric sequence of your choice.
2. Ten friends planned to each give the same amount of money to purchase a bridal shower gift. When two of the friends dropped out, the rest had to give an extra dollar to cover the cost. How much money was each person originally suppose to donate?
3. Given the sequence 1, 4, 9, 16, . . .
 - a. What is special about these numbers (in words, not in mathematical symbols)?
 - b. Give the n th term of this sequence.
 - c. What type of sequence is this (arithmetic, geometric, recursive, other)?
4. Compute the following sum: $2 + 6 + 10 + 14 + \dots + 302$.
5. Take any real number, multiply it by 3, add 49, and divide the result by 7. Subtract 7 from the quotient, divide the new result by 3, and tell me your answer. I will be able to tell you your original number. How?
6. Find the sum of the first 29 terms of an arithmetic sequence in which the 17th term is 179 and $a_{84} = 916$.
7. Using $m, n \in \mathbb{N}$ and a specific natural number of your choice, illustrate the
 - a. addition property of equality.
 - b. multiplication property of equality
8. Given the sequence 81, 108, 144, 192,
 - a. What are the next three terms?
 - b. What type of sequence is this?
 - c. What is a_n ?
9. Let $a_1 = 1$, $a_2 = 1$, $a_3 = 1$, and $a_n = a_{n-3} + a_{n-2} + a_{n-1}$ for $n > 3$.
 - a. What are the next three terms of this sequence?
 - b. What type of sequence is this?
10. Write an equation relating the variables described: The total cost C of membership in a hot air balloon club that charges a \$1200 sign-up fee and \$60 for each of n balloon rides.
11. On the first day, Zach joined a secret club as its only member. Each day after that, five more members joined than on the previous day. How many members joined on the 40th day?
12. Given the sequence 9, 15, 21, 27, 33,
 - a. What are the next three terms?
 - b. What typed of sequence is this?
 - c. What is a_n ?
 - d. Find the sum of the first 41 terms.
13. Given the sequence $x + y$, x , $x - y$,
 - a. What are the next three terms?
 - b. What type of sequence is this?
 - c. What is a_n ?

14. A store clerk wanted to stack boxes in a window display in a triangular arrangement like the one shown below.



- How many boxes can the clerk stack in a window that will hold 8 boxes in the bottom row?
- How many boxes can the clerk stack in a window that will hold 10 boxes in the bottom row?
- How many boxes can the clerk stack in a window that will hold 100 boxes in the bottom row?
- How many boxes can the clerk stack in a window that will hold n boxes in the bottom row?

15. How many different triangles are in the following figure?



16. If each term of an arithmetic sequence is multiplied by a fixed number, will the resulting sequence always be an arithmetic sequence? Justify your answer.

17. Given the sequence 3, -3, 8, -8, 13, -13, . . .

- What are the next three terms?
- What type of sequence is this?

18. Solve for x , showing each step: $5(x + 3) = 15 - x$.

19. Conjecture: A natural number subtracted from a natural number is a natural number.

- Give an example where a natural number subtracted from a natural number is a natural number.
- Give a counterexample to this conjecture.

20. Jennifer had a total of \$2 and consisted of the same number of nickels, dimes and quarters. How many did she have of each?

21. Use the following problem to illustrate the four-step problem-solving process. List each step.

An operator-assisted telephone call to another state costs \$10.15 for 15 minutes. The same call dialed directly costs \$0.60 for the first minute and \$0.40 for each additional minute. How much money is saved by dialing direct?