

Special Topics from Chapter 1

1. List three more terms that complete a pattern for each of the following:

a. 14, 18, 22, 26, ____, ____, ____

b. 6, 30, 150, 750, ____, ____, ____

c. -4, -1, 4, 17, 44, ____, ____, ____

d. 6, -3, 3, 0, 3, ____, ____, ____

2. Find a possible n^{th} term in each part of problem #1.

a. _____

b. _____

c. skip part c, unless you like a challenge

d. _____

3. Given $a_n = 2n - 4$, list the first 4 terms of the sequence.

4. Find the sum of the sequence: $8 + 15 + 22 + 29 + \dots + 176$

5. Complete the following magic square:

24	11	10	
13	18	19	16
	14		
		22	

6. A pencil and a pen together cost \$1.10. The pen costs \$1 more than the pencil. What is the cost of each?

7. If fence posts are placed in a straight row, every 5 ft, how many will it take to cover 50 feet?

8. Given the six prime numbers 2, 3, 5, 7, 11, and 13 pick five of them such that when multiplied together the product is 10010.

9. How many different ways can you make change for 85 cents, using quarters, dimes, and nickels?
10. A baseball team played 58 complete games last season. They had 12 fewer losses than wins. How many games did the team win?
11. Write a valid conclusion based on the following statements:
We will have a quiz today if and only if it is Monday, Wednesday, or Friday..
Today is not Monday, Wednesday or Friday.
12. The students in Mr. Mead's class are standing in a circle. They are evenly spaced and are numbered in order. The student with number 8 is directly across from the student with number 20. How many students are in the class? (Explain how you get your solution.)
13. Write the negation of each of the following:
- Some cats are short haired.
 - All students like recess.
 - Some pets are not well-behaved.
 - No speeding is allowed.
 - There exists a counting number x such that $5x - 12 = 33$.
14. State whether each of the following is a statement or not, and if it is a statement, tell whether it is *true* or *false*.
- He lives around the corner from the University.
 - $4x + 19 = 2(6 + 2x)$
 - Your MATH 365 instructor is an experienced teacher.
15. Toma's team entered a mathematics contest where teams of students compete by answering questions that are worth either 3 points or 5 points. No partial credit was given. Toma's team scored 50 points on 12 questions. How many 5-point questions did the team answer correctly?
16. Find the 49th term in the sequence 23, 27, 31, 35, ...