1. A sequence is an ordered list of numbers. Which sequence does not "belong" with the others in the following group? Why doesn't it belong?

   a. 2, 4, 6, 8, 10   b. -12, -6, 0, 6   c. $\frac{1}{3}, \frac{2}{3}, 1, \frac{4}{3}$ d. $\frac{2}{9}, \frac{2}{3}, 2, 6$

2. Find the 5th term in the sequence that is explicitly defined as: $a_k = 3k + 2$ for n ≥ 1

3. Find the 3rd term in the sequence that is "recursively" defined as:
   $a_1 = 5$ $a_n = 2a_{n-1} + 3$ for n > 1

4. We think of the domain of a sequence of numbers as the _____ and the range as the _____.

5. Which function is an arithmetic sequence similar to? A) sine   B) square   C) linear   D) exponential

6. Your car payment is $150 per month.
   a. Write a recursively defined sequence to show the cumulative amount of money you have paid for the car.

   b. Write the explicit version for this sequence.

7. What is the definition of a relation?

8. A sequence is just an ordered list of numbers. Explain why it can be understood to be a relation?

9. a) Define the following sequence recursively.   b) Define the sequence explicitly using set-builder notation.
   -2, 4, 10, 16, 22,…

10. Find the 10th term in the sequence that has been recursively defined: $a_n = a_{n-1} + \dfrac{5}{3}$

    $a_1 = -\dfrac{3}{7}$

11. Find the recursive formula for: $-28, -23, -18, -13, ...$

12. Find the explicit formula for the sequence in problem #11

13. Redefine the following set of numbers in interval notation: 3 ≤ x < 5

14. What is the difference between a linear <u>function</u> and an <u>arithmetic sequence</u>.

15. What do linear functions and arithmetic sequences have in common (how are they alike)?

16. Find the indicated term of each arithmetic sequence.

    23rd term; $-19, -15, -11, \ldots$

17. Find the next two terms in each arithmetic sequence given the initial value (a_1) and common difference (d)
$$a_1 = 8, \qquad d = -1.7$$

18. The yearbook staff is unpacking a box of school yearbooks. The sequence 281, 270, 259, 248,... represents the total number of ounces that the box weighs as each yearbook is taken out.
    a. What is the weight of each yearbook?

    b. After 20 yearbooks were unpacked, how much did the box weigh?

    c. If the full box of yearbooks weighs 281 ounces, how many yearbooks were in the box?

    d. Why doesn't the weight of an individual book divide the weight of the box evenly?