Name _____

HW L4-1

1.   Let a_n be an arithmetic sequence with $a_3 = -7$ and $a_8 = 3$.

            a. Identify the common difference.

            b. Find a_1.

2.   Which of the following could be described using an arithmetic
            sequence?

            A) The cost of n gallons of fuel at the gas station

            B) The weight of a stack of n chairs

            C) The number of homework problems on the nth day of the school
               year

            D) The number of inches of snow on the ground, n hours into a
               snowstorm

MATH MEDIC

3.   The table below gives some values for an arithmetic sequence.

Term number (n)	1	2	3	4	5	6
n^{th} (a_n)	19				-5	

a. Complete the table.

b. Write an equation for a_n .

4.   Kelly has a goal of drinking more water during the month of July. On July 1st , she drinks 48 fluid ounces of water, and her goal is to increase this amount by 4 fluid ounces every day. Suppose that Kelly meets her goal and answer the following.

a. Write a formula for W_n , the number of fluid ounces of water Kelly drinks on the nth day of July.

b. Use your formula to determine the number of fluid ounces Kelly drinks on July 13th .

c. Find the total number of fluid ounces Kelly drinks in the month of July. Show your work.

5.   The nth term of a sequence is given by $a_n = -13 + 7(n-4)$.

     a. Is the sequence arithmetic? Explain.

     b. Find a_4 .

     c. Is a_0 greater than, less than, or equal to -13 ? Explain.

📊6.   A visual pattern is shown.

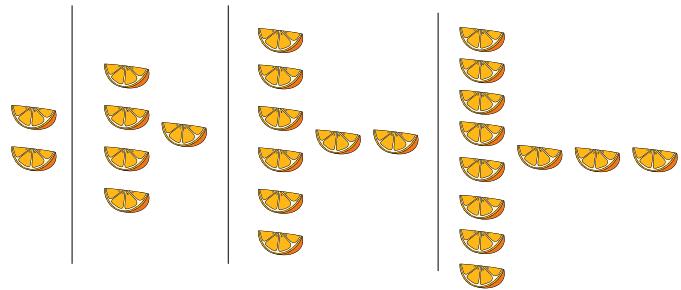a. How many orange wedges will there be in Figure 7? How do you know?

Figure 1   Figure 2   Figure 3   Figure 4

b. How many orange wedges will there be in Figure n?

c. Generate a strategy to determine how many total orange wedges are needed to create Figure 1 through Figure 20.

7. The 5th term of an arithmetic sequence is 40. If the common difference between consecutive terms is k, write a simplified expression involving k for the 11th term of the sequence.

8. Let a_n be the nth term of an arithmetic sequence with a common difference of 12. Determine if there is enough information to find each of the following. If so, find the value. If not, explain why not.

a. a_1

b. $a_8 - a_5$

c. $3a_8 - 2a_5$