**Arithmetic Sequences and Series Assignment Name:**

 Total: /38 = %

1. State the common difference and find the simplified general term for the arithmetic sequence (3 marks each)
2. 9, 14, 19, 24 b) 11, 7, 3, -1
3. Given the first term and the common difference, find the simplified general term and the desired term. (3 each)
4. $a = 50, d = -9 $ Find $t\_{23}$
5. $a=\frac{1}{5}, d=\frac{2}{5}$ Find $t\_{10}$
6. For each sequence, determine n (term number) for the last value. (2 marks each)
7. -3, -8, -13, …, -58 b) $5, 4\frac{7}{8}, 4\frac{6}{8}, . . . ,\frac{3}{8}$
8. Determine the common difference, first term, and general term for the arithmetic sequence. (4 marks)

 $t\_{8}=33$ $t\_{33}=57$

1. Determine the sum of the arithmetic series 3, 12, 21……48 (3 marks)
2. Determine $S\_{30} $for the arithmetic series. -21, -15.5, - 10, -4.5 … (2 marks)
3. Determine the value of the first term, a, for the arithmetic series defined by: $ d= 6$ $ S\_{n}= -252 n=18$ (2 marks)
4. Complete each sequence -27, \_\_\_\_\_, \_\_\_\_\_, -36 (2 marks)
5. How many terms are in the arithmetic sequence 55, 30, 5, -20, . . . , -395?
(3 marks)

***Do two of the three problems below. (6 marks)***

1. In a grocery store, cans of soup are stacked in a triangular display. There are 4 cans in the top row and 20 cans in the bottom row. How many cans are in the display if there are 17 rows? (3 marks)
2. On the first day of the month, Michael places 5₵ in a jar. The next day, he places 7₵ in the jar. The third day, he places 9₵ in the jar, and so on for 24 days. What amount will be in the jar at the end of this period of time?
(3 marks)
3. At the end of the fifth week after opening, a new fitness club has 870 members. At the end of the tenth week, there are 1110 members. Suppose the increase in members is arithmetic. (4 marks – *1 mark is bonus*)
*Hint: Use two equations and tn! Then find a and d!*

How many members joined the club per week and the number of members there were in the first week?