Unit 7 – Review

1. Indicates the sequences that are arithmetic. For each arithmetic sequence, determine the value of t_1, d, and the next three terms.

a) $36, 40, 44, 48 \ldots$

b) $-35, -40, -45, -50 \ldots$

c) $1, 2, 4, 8 \ldots$

d) $8.3, 4.3, 0.3, -3, -3.7 \ldots$

2. For the sequence: $7, 14, 21, 28 \ldots$ Determine whether each number is a term in this sequence. If the number is a term in the sequence, determine the value of n for that term.

a) 98

b) 110

c) 378

d) 575

3. Given the sequence: $2, 9, 16, 23 \ldots$ Determine each term.

a) t_{17}

b) t_{26}

4. Given the sequence: $-10, -7, -4 \ldots$ Determine each term.

a) t_{11} b) t_{22}

5. Determines the rank of each term to complete the statement.

a) 250 is the $\blacksquare^{th}$ term of $10,\ 15,\ 20\ \ldots$ b) -30 is the $\blacksquare^{th}$ term of $40, 38, 36\ \ldots$

c) 121 is the $\blacksquare^{th}$ term of $1, 4, 7\ \ldots$ d) 153 is the $\blacksquare^{th}$ term of $-11, -7, -3\ \ldots$

6. Given the sequence defined by $t_n = 5n - 12$. Determine each term.

a) t_7 b) t_{13}

7. Given the sequence defined by $t_n = -3n + 4$. Determine each term.

a) t_{31} b) t_5

8. Given the arithmetic sequence with values of $t_1 = 7$ and $d = 2$; determine the general term, t_n.

9. Given the arithmetic sequence with values of $t_1 = -4$ and $d = 6$; determine the general, t_n.

10. Given the arithmetic sequence with values of $t_1 = -5$ and $d = -8$; determine the general term, t_n.

11. Determines the tenth term of the arithmetic sequence whose first term is 5 and the fourth term is 17.

12. Determines the first term of the arithmetic sequence whose 18th term is 262 and the common difference is 15.

13. Determines the first term of the arithmetic sequence whose 30th term is -215 and the common difference is -8.

14. The 3rd term of an arithmetic sequence is 14 and the 13th term is 74. Determine:

a) d

b) t_1

c) t_n

15. The 5th term of the arithmetic sequence is -30 and the 20th term is -135. Determine:

a) d

b) t_1

c) t_n