Name: _____ Date: _____

6.4 Arithmetic Sequences

BLM 6–7

1. Given the values of a and d, write the general term. Use this general term to write the first four terms of the arithmetic sequence.

a) $a = 2, d = -1$
b) $a = -4, d = -3$
c) $a = -7, d = 2$
d) $a = 13, d = 4$

2. For each of the given general terms of the arithmetic sequence, determine

i) t_2
ii) t_{10}
iii) t_{14}

a) $t_n = -5 - n$
b) $t_n = 14 - 5n$
c) $t_n = -8 + 7n$
d) $t_n = 21 + 4n$

3. Determine the term in the arithmetic sequence 4, 11, 18, 25, 32, … that has a value of

a) 179
b) 354
c) 298

4. Determine the number of terms in each arithmetic sequence.

a) 12, 19, 26, 33, …, 187
b) −16, −11, −6, −1, …, 199
c) −2, 0, 2, 4, 6, 8, …, 198
d) 8, 5, 2, −1, …, −172

5. Verify that the sequence determined by the recursion formula $t_1 = 5$ and $t_n = t_{n-1} + 5$ is arithmetic.

6. Determine the value of a and d in each of the following. Use these values to write the formula for the nth term.

a) $t_3 = 2, t_8 = -8$
b) $t_2 = 11, t_{11} = 56$
c) $t_5 = -1, t_6 = 1$
d) $t_8 = -55, t_{14} = -73$

7. For each sequence in question 6, write a recursion formula.

8. A gym membership offers a decrease in the monthly fee of $2 after the first 6 months. If the initial monthly fee is $67, how long will it take for the monthly fee to reach $41?

9. How many multiples of 7 are there between 41 and 102?

978-0-07-000985-1