

## Algebra Unit 1.7 Practice: Arithmetic Sequences Day 2

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1. The second term in a sequence is 7. Each term of the sequence is 10 more than the preceding term. Which equation gives the  $n$ th term of the sequence? (Hint: Use the formula from #2 below)

a.  $a_n = -3n + 13$

c.  $a_n = 10n - 13$

b.  $a_n = 10n - 3$

d.  $a_n = 10n + 7$

2. Write a formula for the  $n$ th term of the arithmetic sequence: 1, 3, 5, 7, ...

Equation: \_\_\_\_\_

Find the value of the sequence when  $n = 14$        $f(14) =$  \_\_\_\_\_

3. Write a formula for the  $n$ th term of the arithmetic sequence: 14, 11.25, 8.5, 5.75, ...

Equation: \_\_\_\_\_

Find the value of the sequence when  $n = 23$        $f(23) =$  \_\_\_\_\_

4. Write a formula for the  $n$ th term of the arithmetic sequence: -11, -17, -23, -29, ...

Equation: \_\_\_\_\_

Find the value of the sequence when  $n = 15$        $A(15) =$  \_\_\_\_\_

5. Write a formula for the  $n$ th term of the arithmetic sequence: -9, -5.4, -1.8, 1.8, 5.4, ...

Equation: \_\_\_\_\_

Find the value of the sequence when  $n = 21$        $g(21) =$  \_\_\_\_\_

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6. The population of a community is 35,000 in January and increases by 175 each month thereafter.
- Write out the population sequence for the first 5 months of the year.
  - Write an equation to model this situation.
  - How many people will be in the community in October?
7. Thomas has entered into a weight loss competition. He begins the competition at 325lbs and plans to lose 4.5lbs each week.
- Write out the sequence for the first 6 weeks of the competition.
  - Write an equation to model this situation.
  - How much will Thomas weigh after 11 weeks?

Write a formula for the  $n$ th term for each arithmetic sequence. Find the 5th and 8th terms of each sequence.

<p>8.                    6, 11, 16, 20,...</p> <p>Formula: _____</p> <p>5th term: _____ 8th term: _____</p>	<p>9.                    <math>A(1) = 345, d = -5.2</math></p> <p>Formula: _____</p> <p>5th term: _____ 8th term: _____</p>
<p>10.                    <math>a_1 = 12, d = -2.2</math></p> <p>Formula: _____</p> <p>5th term: _____ 8th term: _____</p>	<p>11. Find the 100th term in a sequence based on the following equation: <math>A_n = 3n + 16</math></p> <p><math>A(100) =</math> _____</p>