NEW OUTCOME: Analyze and make predictions about arithmetic and geometric sequences and series.

1. Robert's dad is in the military and has been all over the world. Robert and his dad collect 8 postcards each month from different countries. They started with 2 postcards. How can you model how many postcards Robert and his dad will own in n months?

2. The table of values represents an arithmetic sequence $a(n)$. What is the 20th term of the sequence?

n	1	2	3	4
$a(n)$	54	53	52	51

3. The 8th term of an arithmetic sequence is 24 and the 14th term is 60. What is a rule for the sequence?

4. Consider the arithmetic sequence whose rule is $a_n = 6 + (n - 1)8$. What is the sum of the first 17 terms of the sequence?

5. Tenzin is buying a new cell phone. She will pay for the phone in equal monthly payments over the next 24 months.
   (a) Can the amount remaining to be paid after n months be modeled by an arithmetic sequence? Explain.

   (b) How can you find the common difference? Will it be positive or negative?

   (c) Why is the first term not 450? What is the first term?

   (d) Write a rule for the sequence that models this situation.

6. The sum of the first 28 terms of an arithmetic sequence is -1736. The 28th term of the sequence is -116. What is the rule for the arithmetic sequence?

7. The set of numbers {1, -3, -7, -11, … } are the terms of an arithmetic sequence. What is the sum of the first 10 terms?

   CHALLENGE: What is the sum of the next 10 terms (that is, the 11th through the 20th)? Explain what you did differently to determine both sums.