ch. 4 practice test

1. Identify each sequence as arithmetic or geometric. Then determine the common difference or common ratio for each sequence.
   
a. 2, 5, 8, 11, 14, 17
   
b. 26, 12, –24, 48, –96
   
c. \[ 1, \frac{1}{4}, \frac{1}{16}, \frac{1}{64}, \frac{1}{256} \]
   
d. 0.13, 0.38, 0.63, 0.88, 1.13

3. What is the common difference in the sequence –40, –12, 16, 44,…?

4. Determine the 7th term in the sequence defined by \( g_n = 2 \cdot \left( \frac{1}{2} \right)^{n-1} \).

Standardized Test Practice

5. Which statement describes the pattern shown?

   a. Each figure has 3 fewer squares than the one before it.
   b. Each figure has 6 fewer squares than the one before it.
   c. Each figure has 3 more squares than the one before it.
   d. Each figure has 6 more squares than the one before it.

6. Gregory has agreed to donate $250 to Spring Valley High School for its library. In addition, he will donate $5 for every book a student at Spring Valley High School reads during the summer. The sequence shown represents the possible amounts that Gregory will be donating for the summer.

   250, 255, 260, 265, 270, 275,…

   Which explicit formula represents this problem situation?

   a. \( a_n = 5 + 250(n - 1) \)
   b. \( a_n = 250 + 5(n - 1) \)
   c. \( a_n = 250 + (n - 5) \)
   d. \( a_n = 250 + 5n \)

7. Which sequence has a common ratio of –3?
10. Which sequence has a common difference of 1.25?

a. 0, −1.25, −2.5, −3.75, −5
b. 0, 1.25, 2.5, 3.75, 5
c. 0, 0.25, 0.5, 0.75, 1
d. 0, −0.25, −0.5, −0.75, −1

11. Shelby’s printer had 500 sheets of paper in it. After Monday, there were 466 sheets of paper. After Tuesday, there were 432 sheets of paper. After Wednesday, there were 398 sheets of paper. If this pattern continues, how many sheets of paper will be left after Friday?

a. 34
b. 296
c. 330
d. 364

12. Which represents the explicit formula for the geometric sequence \( g_n = 12 \cdot 2^{n-1} \) in function form?

a. \( f(n) = \frac{1}{3} \cdot 4^n \)
b. \( f(n) = \frac{1}{4} \cdot 3^n \)
c. \( f(n) = 3 \cdot 4^n \)
d. \( f(n) = 36 \cdot 3^n \)

13. Determine if the sequence is arithmetic or geometric. Then identify the next term in the sequence.

0.2, 1, 5, 25,...

a. arithmetic; 75
b. arithmetic; 125
c. geometric; 75
d. geometric; 125

14. What is the 10th term of the arithmetic sequence defined by the formula \( a_n = 1 + \frac{1}{3} (n - 1) \)?

a. 3
b. 4
c. \( \frac{1}{3} \)
d. 12

15. What is the common ratio of the sequence 6, −3, 1.5, −0.75?
16. Which represents the explicit formula for the arithmetic sequence $a_n = 7 - 3(n - 1)$ in function form?

a. $f(n) = 3n - 6$
b. $f(n) = -3n + 6$
c. $f(n) = 3n - 10$
d. $f(n) = -3n + 10$

17. Which describes the pattern shown?

a. Each figure has one-third as many circles as the one before it.
b. Each figure has half as many circles as the one before it.
c. Each figure has twice as many circles as the one before it.
d. Each figure has three times as many circles as the one before it.

18. Determine if the sequence $-184, -207, -230, -253, \ldots$ is arithmetic or geometric. Then identify the next term in the sequence.

a. arithmetic; $-23$
b. arithmetic; $-276$
c. geometric; $-23$
d. geometric; $-276$

19. Which explicit formula is represented by the graph?
20. What is the next term in the sequence 1.35, 4.49, 7.63, 10.77, 13.91, …?
   a. 20.19  
   b. 17.05  
   c. 3.14  
   d. -1.79

21. Which represents the explicit formula for the geometric sequence \( g_n = -3 \cdot 2^{n-1} \) in function form?
   a. \( f(n) = -\frac{3}{2} \cdot 2^n \)  
   b. \( f(n) = -\frac{2}{3} \cdot 2^n \)  
   c. \( f(n) = \frac{3}{2} \cdot 2^n \)  
   d. \( f(n) = \frac{2}{3} \cdot 2^n \)

22. Brittany is a scientist. She is recording the number of cells in a dish. After each hour, the cell divides into four cells. The sequence shown represents the growth of the cells.
   1, 4, 16, 64, 256,…
   Which explicit formula represents this situation?
Raymond is filling his kitchen sink to wash dishes. After one minute, there are 2.75 gallons of water in the sink. After two minutes, there are 5.5 gallons of water in the sink. After three minutes, there are 8.25 gallons of water in the sink. If this pattern continues, how many gallons of water will be in the sink after five minutes?

a. 2.75  
b. 11  
c. 13.75  
d. 16.5

What is the next term in the sequence?

\[ \frac{1}{2}, \frac{1}{6}, \frac{1}{18}, \frac{1}{54}, \ldots \]

a. \( \frac{1}{3} \)  
b. \( \frac{1}{64} \)  
c. \( \frac{1}{90} \)  
d. \( \frac{1}{162} \)

**Is There a Pattern Here?**

**Recognizing Patterns and Sequences**

Pascal’s Triangle is a famous pattern named after the French mathematician and philosopher Blaise Pascal. A portion of the pattern is shown.

\[
\begin{array}{ccccccc}
1 \\
1 & 1 \\
1 & 2 & 1 \\
1 & 3 & 3 & 1 \\
1 & 4 & 6 & 4 & 1 \\
1 & 5 & 10 & 10 & 5 & 1 \\
1 & 6 & 15 & 20 & 15 & 6 & 1
\end{array}
\]
25. Analyze the diagonals labeled on Pascal’s Triangle.

```
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
1 5 10 10 5 1
1 6 15 20 15 6 1
1 7 21 35 35 21 7 1
1 8 28 56 70 56 28 8 1
```

a. Determine the next two terms in the pattern for the second diagonal. Explain how you determined the next two terms.

b. Analyze the third diagonal. Does this have the same pattern as the 2nd diagonal? Determine the next two terms in this sequence. Explain your reasoning.

Consider the first 2 terms of this sequence.

28, 14, …

26. Let’s suppose the sequence 28, 14,… is geometric.

a. What is the common ratio?

b. List the next 3 terms in the sequence.

c. Explain how you determined your answers in part (b).

d. Is this sequence finite or infinite? Explain your reasoning.
27. Triplets seem to run in the Tribiani family. Great-grandma Tribiani is one of a set of triplets. She had triplets, and each of them had triplets. The sequence shows the number of descendants in the Tribiani family over several generations if this trend continues.

1, 3, 9, 27, …

a. Describe the sequence.

b. Write an explicit formula to represent this sequence.

c. Create a table of values using the first 10 terms of the sequence.

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<th>Term Number</th>
<th>Term Value</th>
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d. Use each pair of numbers from the table as an ordered pair. Then graph the ordered pairs on the grid shown.
e. Describe the shape of the graph. How does the graph’s shape confirm your answer to part (a)?

f. Is the graph discrete or continuous? Explain your reasoning.

g. Use the explicit formula from part (b) to predict the number of descendants in the Tribiani family in 20 generations. Show your work.

28. Rakesha claims that the equation \( f(n) = 5n - 7 \) is the function notation for the sequence that is represented by the explicit formula \( a_n = -2 + 5(n - 1) \). Jin doesn’t understand how this can be the case.

   a. Help Jin understand by listing the steps for how to write the explicit formula for the given sequence in function notation. Provide a rationale for each step.

   b. Describe the graph of this function. Explain your reasoning.

Vocabulary

Choose the term that best completes each statement.

<table>
<thead>
<tr>
<th>sequence</th>
<th>term of a sequence</th>
<th>infinite sequence</th>
<th>finite sequence</th>
</tr>
</thead>
</table>

29. A sequence which terminates is called a(n) __________.

30. A(n) __________ is an individual number, figure, or letter in a sequence.

31. A(n) __________ is a pattern involving an ordered arrangement of numbers, geometric figures, letters, or other objects.

32. A sequence which continues forever is called a(n) __________.

   Write a numeric sequence to represent each given pattern or situation.
33. Kyle is collecting canned goods for a food drive. On the first day he collects 1 can. On the second day he collects 2 cans. On the third day he collects 4 cans. On each successive day, he collects twice as many cans as he collected the previous day. Write a numeric sequence to represent the total number of cans Kyle has collected by the end of each of the first 7 days of the food drive.

34. For her 10th birthday, Tameka’s grandparents give her a set of 200 stamps. For each birthday after that, they give her a set of 25 stamps to add to her stamp collection. Write a numeric sequence consisting of 7 terms to represent the number of stamps in Tameka’s collection after each of her birthdays starting with her 10th birthday.

Determine the common difference for each arithmetic sequence.

35. $10, 3, -4, -11, \ldots$

36. $-28, -13, 2, 17, \ldots$

Determine the common ratio for each geometric sequence.

37. $2, 8, 32, 128, \ldots$

38. $64, -32, -16, -8, \ldots$

Determine the next 3 terms in each arithmetic sequence.

39. $-24, -14, -4, 6, \ldots$

Determine the next 3 terms in each geometric sequence.

40. $0.2, 1.2, 7.2, 43.2, \ldots$

41. $0.1, 0.4, 1.6, 6.4, \ldots$

Determine whether each given sequence is arithmetic, geometric, or neither. For arithmetic and geometric sequences, write the next 3 terms of the sequence.

42. $4, -8, -20, -32, \ldots$

**Vocabulary**

Choose the term that best completes each statement.

<table>
<thead>
<tr>
<th>index</th>
<th>explicit formula</th>
<th>recursive formula</th>
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</table>

43. A(n) _________ expresses each term of a sequence based on the preceding term of the sequence.

44. The _________ is the position of a term in a sequence.

45. A(n) _________ calculates each term of a sequence using the term’s position in the sequence.
Determine each unknown term in the given arithmetic sequence using the explicit formula.

46. Determine the 20th term of the sequence 1, 4, 7, . . .

47. Determine the 30th term of the sequence −10, −15, −20, . . .

48. Determine the 25th term of the sequence 3.3, 4.4, 5.5, . . .

49. Determine the 42nd term of the sequence 12.25, 14.50, 16.75, . . .

Determine each unknown term in the given geometric sequence using the explicit formula. Round the answer to the nearest hundredth when necessary.

50. Determine the 14th term of the sequence −4, 8, −16, . . .

51. Determine the 10th term of the sequence 5, −25, 125, . . .

Determine whether each sequence is arithmetic or geometric. Then, use the appropriate recursive formula to determine the unknown term(s) in the sequence.

52. 2, −6, 18, _____, 162, _____, . . .

53. 7.3, 9.4, 11.5, _____, 15.7, _____, . . .

54. Determine the 30th term of the sequence 350, 700, 1050, . . .

Problem Set
Complete the table for each given sequence then graph each sequence on the coordinate plane.

55. \( a_n = 15 + 3(n - 1) \)

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56. \( a_n = 75 + 25(n - 1) \)

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Problem Set

Write each arithmetic sequence as a linear function. Graph the function for all integers, $n$, such that $1 \leq n \leq 10$.

57. $a_n = 550 + (-50)(n - 1)$
1. **ANS:**
   a. arithmetic; common difference: 3
   b. geometric; common ratio: -2
   c. geometric; common ratio: \( \frac{1}{4} \)
   d. arithmetic; common difference: 0.25

   **PTS:** 1  
   **REF:** 4.2  
   **NAT:** F.BF.1.a | F.LE.2 | F.LE.1.b | F.LE.1.c  
   **TOP:** Pre Test

2. **ANS:**
   a. \( f(n) = 0.2n + 4.8 \)
   b. \( f(n) = -1.5 \cdot (-2)^n \)

   **PTS:** 1  
   **REF:** 4.5  
   **NAT:** F.IF.1 | F.IF.2 | F.IF.3 | F.BF.1 | F.BF.2 | F.LE.1 | F.LE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2 | F.LE.5  
   **TOP:** Pre Test

3. **ANS:** 28

   **PTS:** 1  
   **REF:** 4.2  
   **NAT:** F.BF.1.a | F.LE.2 | F.LE.1.b | F.LE.1.c  
   **TOP:** Mid Ch Test

4. **ANS:**
   \[ g_1 = 2 \cdot \left( \frac{1}{2} \right)^{7-1} \]

   \[ g_1 = 2 \cdot \left( \frac{1}{2} \right)^6 \]

   \[ g_1 = 2 \cdot \left( \frac{1}{64} \right) \]

   \[ g_1 = \frac{1}{32} \]

   **PTS:** 1  
   **REF:** 4.3  
   **NAT:** F.BF.1.a | F.BF.2 | A.SSE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2  
   **TOP:** End Ch Test

5. **ANS:** C  
   **PTS:** 1  
   **REF:** 4.1  
   **NAT:** F.LE.1.b | F.LE.1.c | F.LE.2  
   **TOP:** Standardized Test

6. **ANS:** B  
   **PTS:** 1  
   **REF:** 4.3  
   **NAT:** F.BF.1.a | F.BF.2 | A.SSE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2
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24. **ANS:** D  
**PTS:** 1  
**REF:** 4.2  
**NAT:** F.BF.1.a | F.LE.2 | F.LE.1.b | F.LE.1.c  
**TOP:** Standardized Test  
**KEY:** arithmetic sequence | common difference | geometric sequence | common ratio

25. **ANS:**

2nd diagonal

3rd diagonal

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

1 5 10 10 5 1

1 6 15 20 15 6 1

21 7

28 8

**a.** See triangle.

The diagonal started at 1 then each term increased by 1. The next two terms are 7 and 8.

**b.** See triangle.

The sequence begins at 1. To determine the next term, add 2, then add 3, then add 4 and so on. To get the next two terms I added 15 + 6 to get 21 and then 21 + 7 to get 28.

**PTS:** 1  
**REF:** 4.1  
**NAT:** F.LE.1.b | F.LE.1.c | F.LE.2  
**TOP:** Assignment  
**KEY:** sequence | term of a sequence | infinite sequence | finite sequence

26. **ANS:**

**a.** $14 \times 28 = \frac{1}{2}$

The common ratio is $\frac{1}{2}$.

**b.** $7, \frac{7}{2}, \frac{7}{4}$

**c.** I multiplied 14 by $\frac{1}{2}$ to get 7. I continued to multiply each term by $\frac{1}{2}$ to get the next term in the sequence.

**d.** This sequence is infinite, because it continues forever.

**PTS:** 1  
**REF:** 4.2  
**NAT:** F.BF.1.a | F.LE.2 | F.LE.1.b | F.LE.1.c  
**TOP:** Assignment  
**KEY:** arithmetic sequence | common difference | geometric sequence | common ratio
27. **ANS:**
   a. The sequence is geometric. I know that it is geometric because each term is multiplied by a constant to produce the next term. The common ratio is 3.
   
   \[ g_n = 1 \cdot (3)^{n-1} \]
   
   c.

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e. The graph is an upward curve that appears to be exponential. The graphs of geometric sequences can be exponential curves. So, the graph confirms that this sequence is geometric.

f. The graph is discrete because the terms are integer values beginning at 1.

g. 
\[ g_2 = 1 \cdot (3)^{-1} \]
\[ g_{20} = 1 \cdot (3)^{19} \]
\[ g_{20} = 1 \cdot 1,162,261,467 \]
\[ g_{20} = 1,162,261,467 \]

There will be 1,162,261,467 descendants in the Tribiani family in 20 generations.

PTS: 1    REF: 4.4    NAT: F.IF.1 | F.IF.4 | F.LE.2    TOP: Assignment  28. ANS: 
a. \[ a_n = -2 + 5(n - 1) \]  Explicit formula for Arithmetic Sequence  
\[ f(n) = -2 + 5(n - 1) \]  Represent \( a_n \) using function notation.  
\[ f(n) = -2 + 5n - 5 \]  Distributive Property  
\[ f(n) = 5n - 5 - 2 \]  Commutative Property  
\[ f(n) = 5n - 7 \]  Associative Property  
b. The graph of this function will be a straight line, because the sequence is arithmetic. All arithmetic sequences begin in Quadrant I or Quadrant IV because the first term number is always 1.

The graph of this function will begin in Quadrant IV because the value of the first term is negative.

PTS: 1    REF: 4.5    NAT: F.IF.1 | F.IF.2 | F.IF.3 | F.BF.1 | F.BF.2 | F.LE.1 | F.LE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2 | F.LE.5    TOP: Assignment  29. ANS: finite sequence

PTS: 1    REF: 4.1    NAT: F.LE.1.b | F.LE.1.c | F.LE.2    TOP: Skills Practice    KEY: sequence | term of a sequence | infinite sequence | finite sequence  30. ANS: term of a sequence

PTS: 1    REF: 4.1    NAT: F.LE.1.b | F.LE.1.c | F.LE.2    TOP: Skills Practice    KEY: sequence | term of a sequence | infinite sequence | finite sequence  31. ANS: sequence

PTS: 1    REF: 4.1    NAT: F.LE.1.b | F.LE.1.c | F.LE.2    TOP: Skills Practice    KEY: sequence | term of a sequence | infinite sequence | finite sequence  32. ANS: infinite sequence
33. ANS:
1, 3, 7, 15, 31, 63, 127

PTS: 1       REF: 4.1     NAT: F.LE.1.b | F.LE.1.c | F.LE.2
TOP: Skills Practice
KEY: sequence | term of a sequence | infinite sequence | finite sequence

34. ANS:
200, 225, 250, 275, 300, 325, 350

PTS: 1       REF: 4.1     NAT: F.LE.1.b | F.LE.1.c | F.LE.2
TOP: Skills Practice
KEY: sequence | term of a sequence | infinite sequence | finite sequence

35. ANS:
d = 3 – 10

d = -7

PTS: 1       REF: 4.2     NAT: F.BF.1.a | F.LE.2 | F.LE.1.b | F.LE.1.c
TOP: Skills Practice
KEY: arithmetic sequence | common difference | geometric sequence | common ratio

36. ANS:
d = -13 – (-28)

d = 15

PTS: 1       REF: 4.2     NAT: F.BF.1.a | F.LE.2 | F.LE.1.b | F.LE.1.c
TOP: Skills Practice
KEY: arithmetic sequence | common difference | geometric sequence | common ratio

37. ANS:
r = 8 ÷ 2

r = 4

PTS: 1       REF: 4.2     NAT: F.BF.1.a | F.LE.2 | F.LE.1.b | F.LE.1.c
TOP: Skills Practice
KEY: arithmetic sequence | common difference | geometric sequence | common ratio

38. ANS:
r = -32 ÷ 64

r = -1/2

PTS: 1       REF: 4.2     NAT: F.BF.1.a | F.LE.2 | F.LE.1.b | F.LE.1.c
TOP: Skills Practice
KEY: arithmetic sequence | common difference | geometric sequence | common ratio

39. ANS:
16, 26, 36

PTS: 1       REF: 4.2     NAT: F.BF.1.a | F.LE.2 | F.LE.1.b | F.LE.1.c
40. ANS:  
259.2, 1555.2, 9331.2  
PTS: 1  REF: 4.2  NAT: F.BF.1.a | F.LE.2 | F.LE.1.b | F.LE.1.c  
TOP: Skills Practice  
KEY: arithmetic sequence | common difference | geometric sequence | common ratio

41. ANS:  
25.6, 102.4, 409.6  
PTS: 1  REF: 4.2  NAT: F.BF.1.a | F.LE.2 | F.LE.1.b | F.LE.1.c  
TOP: Skills Practice  
KEY: arithmetic sequence | common difference | geometric sequence | common ratio

42. ANS:  
The sequence is arithmetic. The next 3 terms are –44, –56, and –68.  
PTS: 1  REF: 4.2  NAT: F.BF.1.a | F.LE.2 | F.LE.1.b | F.LE.1.c  
TOP: Skills Practice  
KEY: arithmetic sequence | common difference | geometric sequence | common ratio

43. ANS: recursive formula  
PTS: 1  REF: 4.3  
NAT: F.BF.1.a | F.BF.2 | A.SSE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2  
TOP: Skills Practice  
KEY: index | explicit formula | recursive formula

44. ANS: index  
PTS: 1  REF: 4.3  
NAT: F.BF.1.a | F.BF.2 | A.SSE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2  
TOP: Skills Practice  
KEY: index | explicit formula | recursive formula

45. ANS: explicit formula  
PTS: 1  REF: 4.3  
NAT: F.BF.1.a | F.BF.2 | A.SSE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2  
TOP: Skills Practice  
KEY: index | explicit formula | recursive formula

46. ANS:  
\[ a_n = a_1 + d(n - 1) \]  
\[ a_{20} = 1 + 3(20 - 1) \]  
\[ a_{20} = 1 + 3(19) \]  
\[ a_{20} = 1 + 57 \]  
\[ a_{20} = 58 \]  
PTS: 1  REF: 4.3  
NAT: F.BF.1.a | F.BF.2 | A.SSE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2  
TOP: Skills Practice  
KEY: index | explicit formula | recursive formula

47. ANS:
\[ a_n = a_1 + d(n - 1) \]
\[ a_{30} = -10 + (-5)(30 - 1) \]
\[ a_{30} = -10 + (-5)(29) \]
\[ a_{30} = -10 + (-145) \]
\[ a_{30} = -155 \]

PTS: 1  REF: 4.3
NAT: F.BF.1.a | F.BF.2 | A.SSE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2
TOP: Skills Practice
KEY: index | explicit formula | recursive formula

48. ANS:
\[ a_n = a_1 + d(n - 1) \]
\[ a_{25} = 3.3 + 1.1(25 - 1) \]
\[ a_{25} = 3.3 + 1.1(24) \]
\[ a_{25} = 3.3 + 26.4 \]
\[ a_{25} = 29.7 \]

PTS: 1  REF: 4.3
NAT: F.BF.1.a | F.BF.2 | A.SSE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2
TOP: Skills Practice
KEY: index | explicit formula | recursive formula

49. ANS:
\[ a_n = a_1 + d(n - 1) \]
\[ a_{42} = 12.25 + 2.25(42 - 1) \]
\[ a_{42} = 12.25 + 2.25(41) \]
\[ a_{42} = 12.25 + 92.25 \]
\[ a_{42} = 104.50 \]

PTS: 1  REF: 4.3
NAT: F.BF.1.a | F.BF.2 | A.SSE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2
TOP: Skills Practice
KEY: index | explicit formula | recursive formula

50. ANS:
\[ g_n = g_1 \cdot r^{n-1} \]
\[ g_{14} = -4 \cdot (-2)^{14-1} \]
\[ g_{14} = -4 \cdot (-2)^{13} \]
\[ g_{14} = -4 \cdot (-8192) \]
\[ g_{14} = 32,768 \]

PTS: 1  REF: 4.3
NAT: F.BF.1.a | F.BF.2 | A.SSE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2
51. ANS:

\[ g_n = g_1 \cdot r^{n-1} \]

\[ g_{10} = 5 \cdot (-5)^{10-1} \]

\[ g_{10} = 5 \cdot (-5)^9 \]

\[ g_{10} = 5 \cdot (-1,953,125) \]

\[ g_{10} = -9,765,625 \]

PTS: 1  
REF: 4.3

NAT: F.BF.1.a | F.BF.2 | A.SSE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2

52. ANS:

-54
-486

The sequence is geometric.

\[ g_n = g_{n-1} \cdot r \]

\[ g_4 = g_3 \cdot (-3) \]

\[ g_6 = g_5 \cdot (-3) \]

\[ g_4 = 18 \cdot (-3) \]

\[ g_6 = 162 \cdot (-3) \]

\[ g_4 = -54 \]

\[ g_6 = -486 \]

PTS: 1  
REF: 4.3

NAT: F.BF.1.a | F.BF.2 | A.SSE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2

53. ANS:

13.6
17.8

The sequence is arithmetic.

\[ a_n = a_{n-1} + d \]

\[ a_4 = a_3 + 2.1 \]

\[ a_6 = a_5 + 2.1 \]

\[ a_4 = 11.5 + 2.1 \]

\[ a_6 = 15.7 + 2.1 \]

\[ a_4 = 13.6 \]

\[ a_6 = 17.8 \]

PTS: 1  
REF: 4.3

NAT: F.BF.1.a | F.BF.2 | A.SSE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2

54. ANS:

\[ a_{30} = 10,500 \]
55. **ANS:**

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<th>Term Number ((n))</th>
<th>Value of Term ((a_n))</th>
</tr>
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<tbody>
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56. **ANS:**

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<th>Value of Term ((a_n))</th>
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<td>300</td>
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</tbody>
</table>

PTS: 1  REF: 4.4  NAT: F.IF.1 | F.IF.4 | F.LE.2

TOP: Skills Practice

57. ANS:

\[ a_n = 550 + (-50)(n - 1) \]

\[ f(n) = 550 + (-50)(n - 1) \]

\[ f(n) = 550 - 50n + 50 \]

\[ f(n) = -50n + 500 + 50 \]

\[ f(n) = -50n + 600 \]
PTS: 1     REF: 4.5
NAT: F.IF.1 | F.IF.2 | F.IF.3 | F.BF.1 | F.BF.2 | F.LE.1 | F.LE.1.a | F.LE.1.b | F.LE.1.c | F.LE.2 | F.LE.5
TOP: Skills Practice