

**Notes: T4-64 Sequences from Table**

For each of the following tables:

- Describe how to find the next term in the sequence.
- Find the next term in the table.
- Tell whether the sequence is arithmetic or geometric or neither.
- Write a recursive rule for the sequence.
- Write an explicit rule for the sequence.
- Tell if the sequence could represent a linear function, an exponential function, or neither.

Example

$x$	$f(x)$
0	5
1	8
2	11
3	14
4	$f(4)$
...	...

a) To find the next term, add 3 to the previous term
b) Next term in the table: $f(4) = 17$
c) Type of sequence: arithmetic
d) Recursive Rule: $f(0) = 5, f(x+1) = f(x) + 3$
e) Explicit Rule: $f(x) = 5 + 3x$
f) Type of function: linear

1)

$x$	$f(x)$
1	1
2	2
3	4
4	8
5	$f(5)$
...	...

a) To find the next term,
b) Next term in the table: $f(5) =$
c) Type of sequence:
d) Recursive Rule:
e) Explicit Rule:
f) Type of function:

2)

$x$	$f(x)$
0	-2
1	10
2	-50
3	250
4	$f(4)$
...	...

a) To find the next term,
b) Next term in the table: $f(4) =$
c) Type of sequence:
d) Recursive Rule:
e) Explicit Rule:
f) Type of function:

3)

$x$	$f(x)$
1	5
2	8
3	13
4	21
5	$f(5)$
...	...

a) To find the next term,
b) Next term in the table: $f(5) =$
c) Type of sequence:
d) Recursive Rule:
e) Explicit Rule:
f) Type of function:

Each of the tables below represents an arithmetic sequence. Find the missing terms in the sequence. Show how you figured it out.

$x$	$f(x)$
1	5
2	
3	11

$x$	$f(x)$
1	-4
2	
3	
4	14

$x$	$f(x)$
1	18
2	
3	
4	
5	-10

Each of the tables below represents a geometric sequence. Find the missing terms in the sequence. Show how you figured it out.

$x$	$f(x)$
1	3
2	
3	12

$x$	$f(x)$
1	2
2	
3	
4	54

$x$	$f(x)$
1	6
2	
3	
4	
5	96

**Assignment: T4-64 Sequences from Table**

Use the directions from the notes to fill in the tables.

1.

$x$	$f(x)$
1	1
2	4
3	9
4	16
5	$f(5)$
...	...

a) To find the next term,
b) Next term in the table: $f(5) =$
c) Type of Sequence:
d) Recursive Rule:
e) Explicit Rule:
f) Type of Function:

2.

$x$	$f(x)$
0	3
1	1
2	-1
3	-3
4	$f(4)$
...	...

a) To find the next term,
b) Next term in the table: $f(4) =$
c) Type of Sequence:
d) Recursive Rule:
e) Explicit Rule:
f) Type of Function:

3.

$x$	$f(x)$
1	5
2	14
3	23
4	32
5	$f(5)$
...	...

a) To find the next term,
b) Next term in the table: $f(5) =$
c) Type of Sequence:
d) Recursive Rule:
e) Explicit Rule:
f) Type of Function:

4.

$x$	$f(x)$
0	-8
1	40
2	-200
3	1000
4	$f(4)$
...	...

a) To find the next term,
b) Next term in the table: $f(4) =$
c) Type of Sequence:
d) Recursive Rule:
e) Explicit Rule:
f) Type of Function:

5.

$x$	$f(x)$
1	-10
2	-20
3	-40
4	-80
5	$f(5)$
...	...

a) To find the next term,
b) Next term in the table: $f(5) =$
c) Type of Sequence:
d) Recursive Rule:
e) Explicit Rule:
f) Type of Function:

Each of the tables below represents an arithmetic sequence. Find the missing terms in the sequence. Show how you figured it out.

6.

$x$	$f(x)$
1	-3
2	
3	1

7.

$x$	$f(x)$
1	17
2	
3	
4	8

8.

$x$	$f(x)$
1	-2
2	
3	
4	
5	30

Each of the tables below represents a geometric sequence. Find the missing terms in the sequence. Show how you figured it out.

9.

$x$	$f(x)$
1	40
2	
3	640

10.

$x$	$f(x)$
1	14
2	
3	
4	112

11.

$x$	$f(x)$
1	12
2	
3	
4	
5	972

## Review

Solve each inequality, write the answer in interval notation, and graph the solution.

12.  $-2x + 6 > 8$

13.  $-7 \leq 3x - 1 < 11$

14.  $\frac{x}{2} < -1$  or  $4x > 16$

