

Practice Arithmetic Sequences

Name Key
Date _____ Class _____

1. What defines a sequence as arithmetic?

A sequence is arithmetic if it has a common difference

2. 0, 5, 10, 15, 20, ...

a. Is this sequence an arithmetic sequence? Yes

b. Describe how consecutive terms of the sequence change.

add 5

c. Describe the sequence by stating a rule that can be used to continue the sequence. Use the formula for finding the nth term -

$$a_n = a_1 + d(n - 1) \quad a_n = 0 + 5(n - 1)$$

$$a_n = 0 + 5n - 5$$

$$\boxed{a_n = 5n - 5}$$

d. Use your rule to make a table to illustrate the sequence.

Term	1	2	3	4	5
Value	0	5	10	15	20

e. Plot the ordered pairs from your table on graph paper.

f. Describe the shape of the graph. line

g. Does your graph represent a linear function? Yes

3. 7, 4, 1, -2, -5, ...

a. Is this sequence an arithmetic sequence? Yes

b. Describe how consecutive terms of the sequence change. Subtract 3

c. Describe the sequence by stating a rule that can be used to continue the sequence. Use the formula for finding the nth term -

$$a_n = a_1 + d(n - 1) \quad a_n = 7 - 3(n - 1)$$

$$7 - 3n + 3$$

$$\boxed{a_n = -3n + 10}$$

d. Use your rule to make a table to illustrate the sequence.

Term	1	2	3	4	5	6
Value	7	4	1	-2	-5	-8

e. Plot the ordered pairs from your table on graph paper.

f. Describe the shape of the graph. line

g. Does your graph represent a linear function? Yes

4. 0, 3, 8, 15, 24, 35, 48, ...

- a. Is this sequence an arithmetic sequence? no
b. Describe how consecutive terms of the sequence change.
+3, +5, +7, etc.

- c. Describe the sequence by stating a rule that can be used to continue the sequence. Use the formula for finding the nth term -
 $a_n = a_1 + d(n - 1)$. none

- d. Use your rule to make a table to illustrate the sequence.

Term							
Value							

- e. Plot the ordered pairs from your table on graph paper.
f. Describe the shape of the graph.
g. Does your graph represent a linear function?

5. Which sequence is not a linear function?

- a. 2, 4, 6, 8, ...
b. 1, 2, 3, 4, ...
c. -12, -8, -4, ...
d. 2, 6, 13, 19, ...

6. Which function is related to the arithmetic sequence found in the table below?

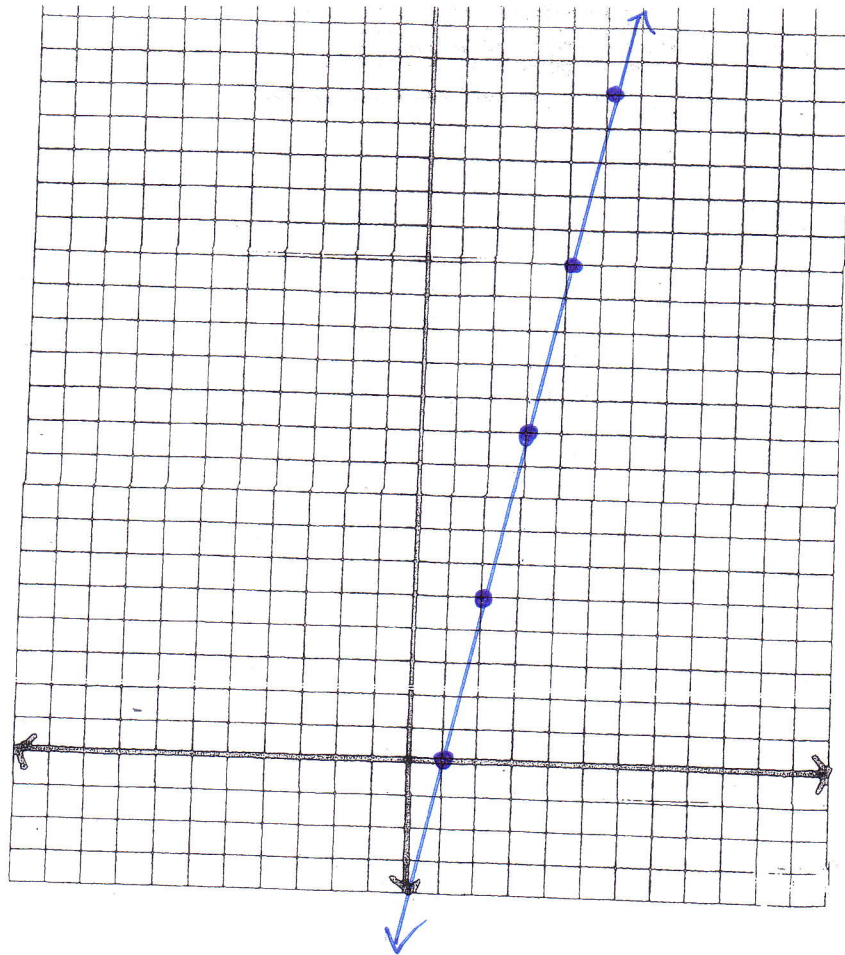
Term	1	2	3	4	x
Value	2	6	10	14	y

- a. $y = 2n$
b. $y = 3n - 1$
c. $y = 4n - 2$
d. $y = 6n - 4$

7. Are all arithmetic sequences linear functions?

Yes. They follow a consistent rule and make a line on a graph.

a.



b.

