

Name: _____ Period: _____

Score: _____/_____ _____%

Secondary 1 H - Unit 3 Review Sheet

1. What is a constant rate? What types of sequences have constant rates?

2. What is a common ratio? What types of sequences have common ratios?

Are the following **arithmetic, geometric, or neither**? Why?

3. 1.4, 4.2, 12.6, 37.8

4. 57, 54, 51, 48

5. 76, 38, 9.5, 1.58

6. 2.3, 6.8, 11.3, 15.8

7. 26, 33, 41, 50

8. 98, 49, 24.5, 12.25

Write the **recursive** and **explicit equations** for each sequence:

9. 2, 8, 32, ...

10. $\frac{5}{6}, \frac{7}{6}, \frac{3}{2}$

11. $-99, -9, \frac{-9}{11}$

12. 46.7, 39.2, 31.7

13. -125, -25, -5, ...

14. 7, 19, 31, ...

For questions #15-24:

Write the **recursive** and **explicit equations** for each sequence given a table of values:

15.

x	$f(x)$
4	24
5	12
6	6
7	3
8	1.5

16.

x	$f(x)$
9	6.5
10	9.3
11	12.1
12	14.9
13	17.7

17.

x	$f(x)$
0	7
1	21
2	63
3	189
4	567

18.

x	$f(x)$
1	-17
2	-9
3	-1
4	7
5	15

19.

x	$f(x)$
67	73
68	69
69	65
70	61
71	57

20.

x	1	2	3	4
$f(x)$	8	20	50	125

21.

x	$f(x)$
54	1863
55	621
56	207
57	69
58	23

22.

x	$f(x)$
-5	9
-4	36
-3	144
-2	576
-1	2304

23.

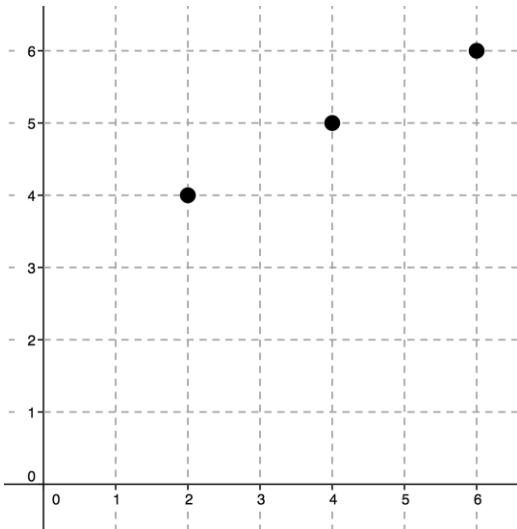
x	-5	-4	-3	-2
$f(x)$	14	8	2	-4

24.

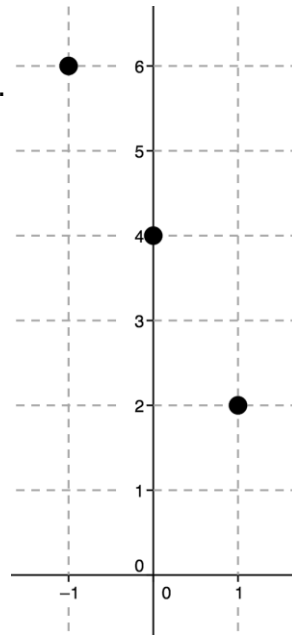
X	$f(x)$
-3	39
-2	45
-1	51
0	57
1	63

Use the graph to find the **recursive** and **explicit equation**:

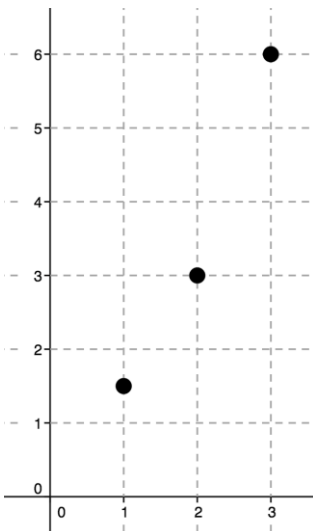
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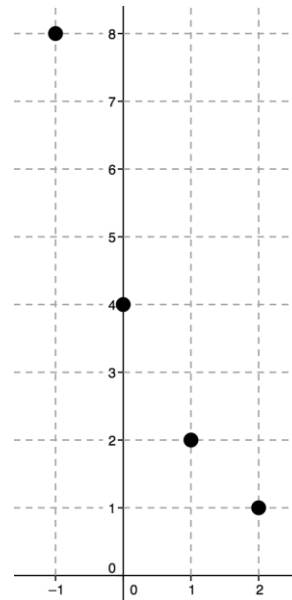
26.



27.



28.



Write the **explicit** equation from each context:

29. Capitol Theater has 51 rows of seats. There are 18 seats in the first row and each row has one more seat than the row before.

30. The fish in the pond are sick. In the beginning there were 500 fish in the pond. Each month there are $\frac{1}{3}$ as many fish as there were the previous month.

31. I borrow \$250 from a friend. I agree to pay this friend back \$55 each month.

32. On the first day I put 1 penny in a jar. Each day after, I put twice as many pennies in the jar as I did the day before.

Use the **explicit** equation to help you answer the following questions:

33. Find the 8th term of the sequence:

$\frac{1}{2}, 1, 2, \dots$

34. Find the 14th term of the sequence:

4, 20, 36, ...

35. Find the -2nd term of the sequence:

15, 7, -1

36. Find the 6th term of the sequence:

-4, -24, -144, ...

37. Find the -4th term of the sequence:

54, 18, 6, ...

38. Find the 7th term of the sequence:

-24, -8, 8, ...

Use the given recursive equations to find the requested values.

39. $f(2) = 5$ $f(x) = f(x-1) - 19$ 40. $f(1) = 3$ $f(x) = 2f(x-1)$

$f(0) =$

$f(1) =$

$f(2) =$

$f(3) =$

$f(4) =$

$f(5) =$

$f(0) =$

$f(1) =$

$f(2) =$

$f(3) =$

$f(4) =$

$f(5) =$

41. $f(1) = 768$ $f(x) = \frac{1}{4}f(x-1)$

$f(0) =$

$f(1) =$

$f(2) =$

$f(3) =$

$f(4) =$

$f(5) =$

42. $f(0) = -23$ $f(x) = f(x-1) + 7$

$f(0) =$

$f(1) =$

$f(2) =$

$f(3) =$

$f(4) =$

$f(5) =$

The following tables represent **arithmetic sequences**. Find the missing terms – show your work!

43.

x	1	2	3	4
$f(x)$	2			206

44.

x	1	2	3	4	5
$f(x)$	-12				8

The following tables represent **geometric sequences**. Find the missing terms – show your work!
45.

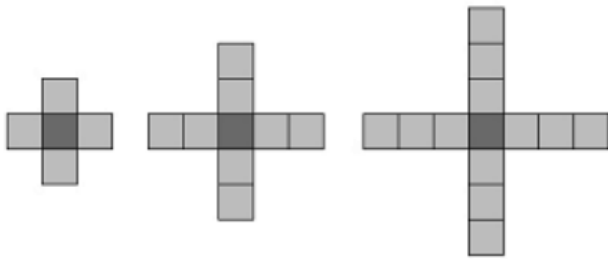
x	1	2	3	4
$f(x)$	144			18

46.

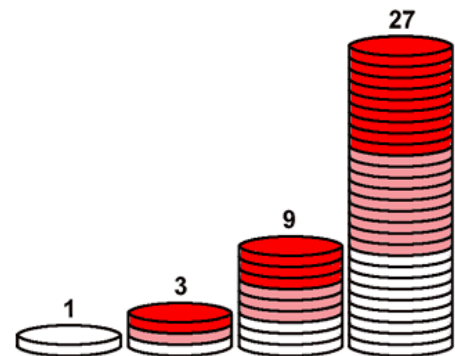
x	1	2	3	4	5
$f(x)$	-2				-13,122

Use the following picture pattern to find the **recursive** and **explicit** equation for each. Assume that the first picture is Step 1.

47.



48.



Use the following **recursive** equations to find the **explicit equation** for each:

49. $f(2) = 7$ $f(x) = f(x-1) + 4$

50. $f(-1) = 6$ $f(x) = 3f(x-1)$

51. $f(1) = -14$ $f(x) = f(x-1) - 5$ 52. $f(1) = 66$ $f(x) = f(x-1) \cdot \frac{1}{2}$

53. $f(-3) = 43$ $f(x) = 2 \cdot f(x-1)$ 54. $f(9) = -5$ $f(x) = f(x-1) + 3$

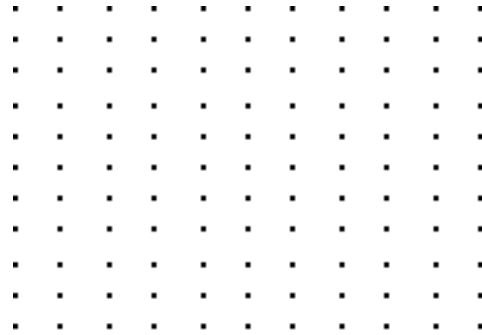
Do the following stories represent **arithmetic** sequences, **geometric** sequences, or **neither**?

55. _____ Sally has 3 freckles. Each week she has twice as many freckles as the week before.
56. _____ My house started with three icicles. Every week the number of icicles doubles.
57. _____ For Halloween, I passed out 263 pieces of candy every 2 hours.
58. _____ Jay had \$700, each day he spent half of a dollar at lunch.
59. _____ Sam collects rocks. He like to pick a few up each Saturday. The first Saturday he picked up 5 rocks. They second Saturday he picked up 6 rocks. The third Saturday he picked up 7 and so on.....
60. _____ Susan filled up her car with gas. Her car holds 20 gallons of gas. Each day she drives around and uses half of the gas left in her tank.

61. Sara wants to share her Halloween candy with every one in the school. On the first day, she gave 6 people candy. After that she decided to only give candy to 3 new people a day.

a) Create a table of at least 5 values

b) Create a graph of the information
(Be sure to label everything!)



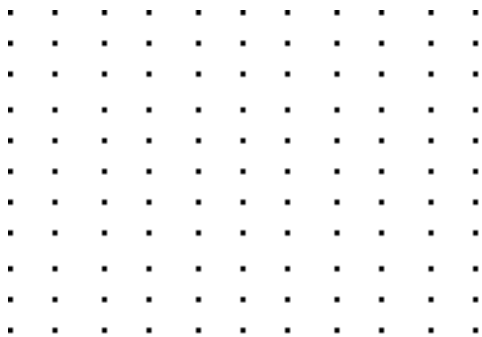
c) Recursive Equation:

d) Explicit Equation:

62. The business club is projecting their frazzle sales for the year. They started by selling \$60 of frazzles on week 9. They predict to triple their sales each week.

a) Create a table of at least 5 values

b) Create a graph of the information
(Be sure to label everything!)



c) Recursive Equation:

d) Explicit Equation: