Math 2 Name: _____

Module 0, Day 5 Date: _____ Period: ____

Review: Sequences, Systems & More

Show all work and reasoning. Use a pencil and highlight your answers.

1. Below you are given various types of information. Write the recursive and explicit functions for each **arithmetic sequence**. Finally, graph each sequence, making sure you clearly label your axes.

a) Kylie transferred to El Camino. She made 3 new friends on the first day, and her number of friends continued to increase by 4 more each day.

Recursive function:

Explicit function:

b) A car dealership has 180 cars in the sales lot. Twenty cars are sold each month.

Recursive function:

Explicit function:

2. Below you are given various types of information. Write the recursive and explicit functions for each **geometric sequence**. Finally, graph each sequence, making sure you clearly label your axes.

a) Kylie eventually got really stuck up, and her friends could no longer could tolerate her attitude. She had 1024 friends, but she lost half of her friends each week.

Recursive function:

Explicit function:

b) Mr. Roeder's yard had 10 weeds on the first month. He did not take care of his yard, so the number of weeds tripled each month thereafter.

Recursive function:

Explicit function:

3. Solve each system of equations.

a) $y = 2x - 10$
$x - 4y = 5$

b) $5x - 4y = 3$
$6x + 4y = 30$

c) $x - 7y = 6$
$-3x + 21y = -18$

d) $2x - 3y = -12$
$-x + 2y = 4$

4. Solve and graph each inequality in parts (a) and (b).

a) $6x - 2(2x - 4) > 4x + 14$

b) $\frac{2}{3}(9x - 12) \geq 3x + 4$

c) For each of these problems, is there only one solution? Explain your answer.

5. Answer the following given each sequence.

a)

n	1	2	3	4
$f(n)$	–7	–16	–25	–34

Is it arithmetic or geometric?

Write a recursive function.

Write an explicit function.

b)

n	1	2	3	4
$f(n)$	½	–4	32	–256

Is it arithmetic or geometric?

Write a recursive function.

Write an explicit function.

a)

n	0	1	2	3
$f(n)$	1350	450	150	50

Is it arithmetic or geometric?

Write a recursive function.

Write an explicit function.