Name: _____ Period: _____

HW 3-2 HONORS: Writing Arithmetic Recursive & Explicit Equations

Find the slope of the line that goes between each pair of points.

1. $(3,7)$ and $(5,10)$ 2. $(-1,4)$ and $(3,3)$ 3. $(0,0)$ and $(2,-5)$ 4. $(-1,-5)$ and $(-4,-5)$

For problems #5-7, do the following:

a) Find the next 3 terms in each sequence.   d) Write an explicit equation for each.

b) Identify the constant rate.   e) **Circle** where you see the constant rate show

c) Write a recursive equation for each.   up in the **recursive** AND **explicit** equations.

5.

x	1	2	3	4	5	6	7	8
$f(x)$	3	8	13	18	23			

b) constant rate: _____

c) recursive equation: _____

d) explicit equation: _____

6.

x	-2	-1	0	1	2	3	4	5
$f(x)$	92	82	72	62	52			

b) constant rate: _____

c) recursive equation: _____

d) explicit equation: _____

7.

x	1	2	3	4	5	6	7	8
$f(x)$	3	1.5	0	-1.5	-3			

b) constant rate: _____

c) recursive equation: _____

d) explicit equation: _____

For the remaining questions, determine if the sequence is arithmetic or not.
 If **YES**, then write the recursive and explicit equation and answer the question provided.
 If **NO**, then you do not need to answer anything else.

8. $-6, -13.9, -21.8, -29.7, ...$ Arithmetic? _____

   Recursive: _____

   Explicit: _____

   Find the 13th term: _____

9. $\dfrac{1}{2}, \dfrac{3}{4}, \dfrac{5}{8}, \dfrac{7}{16}, ...$ Arithmetic? _____

   Recursive: _____

   Explicit: _____

   Find the 39th term: _____

10. $-10, -7, -4, -1, ...$ Arithmetic? _____

   Recursive: _____

   Explicit: _____

   Find the 114th term: _____

11. $-12.3, -9.7, -7.1, -4.5, ...$ Arithmetic? _____

   Recursive: _____

   Explicit: _____

   Find the -4th term: _____

For the remaining questions, determine if the sequence is arithmetic or not.
 If **YES**, then write the recursive and explicit equation and answer the question provided.
 If **NO**, then you do not need to answer anything else.

12.   0.02, 1.08, 2.14, 3.2, ...   Arithmetic? _____

    Recursive: _____

    Explicit: _____

    Find the -11th term: _____

13. 2, $-$ 3, 4, $-$ 5, 6, ...   Arithmetic? _____

    Recursive: _____

    Explicit: _____

    Find the 17th term: _____

14. 21, 19, 17, 15, ...   Arithmetic? _____

    Recursive: _____

    Explicit: _____

    Find the 44th term: _____

15. $-\dfrac{1}{2}$, 0, $\dfrac{1}{2}$, 1, ...   Arithmetic? _____

    Recursive: _____

    Explicit: _____

    Find the 17th term: _____

16. –2, 4, 10, 16, ...   Arithmetic? _____

    Recursive: _____

    Explicit: _____

    Find the 17th term: _____

For question #17, determine if the sequence is arithmetic or not.
If **YES**, then write the recursive and explicit equation and answer the question provided.
If **NO**, then you do not need to answer anything else.

17. $-\dfrac{3}{5},\ -\dfrac{1}{5},\ 0,\ \dfrac{1}{5},\ ...$ Arithmetic? _____

       Recursive: _____

       Explicit: _____

       Find the 17$^{\text{th}}$ term: _____

For the following questions:
     a) **Find the next 3 terms in each sequence.**
     b) **Write a recursive equation.**
     c) **Write an explicit equation.**

18.

x	86	87	88	89	90	91	92	93
$f(x)$	2.6	-1.1	-4.8	-8.5				

     b)_____

     c) _____

19.

x	-15	-14	-13	-12	-11	-10	-9	-8
$f(x)$	52	46	40	34				

     b) _____

     c) _____

20.

x	14	15	16	17	18	19	20	21
$f(x)$	$\dfrac{1}{2}$	$1\dfrac{1}{4}$	2	$2\dfrac{3}{4}$	$3\dfrac{1}{2}$			

     b) _____

     c) _____