Name: $\qquad$ Period: $\qquad$
HW 3-2 HONORS: Writing Arithmetic Recursive \& Explicit Equations

Score:
$\qquad$ \%

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

1. $(\mathbf{3 , 7})$ and $(5,10)$
2. $(-1,4)$ and $(\mathbf{3}, \mathbf{3})$
3. $(\mathbf{0}, 0)$ and $(\mathbf{2},-\mathbf{5})$
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.
5.

| $\boldsymbol{x}$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\boldsymbol{f}(\boldsymbol{x})$ | 3 | 8 | 13 | 18 | 23 |  |  |  |

b) constant rate: $\qquad$
c) recursive equation: $\qquad$
d) explicit equation: $\qquad$
6.

| $\boldsymbol{x}$ | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\boldsymbol{f}(\boldsymbol{x})$ | 92 | 82 | 72 | 62 | 52 |  |  |  |

b) constant rate: $\qquad$
c) recursive equation: $\qquad$
d) explicit equation: $\qquad$
7.

| $\boldsymbol{x}$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\boldsymbol{f}(\boldsymbol{x})$ | 3 | 1.5 | 0 | -1.5 | -3 |  |  |  |

b) constant rate: $\qquad$
c) recursive equation: $\qquad$
d) explicit equation: $\qquad$

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. $-6,-13.9,-21.8,-29.7, \ldots$

Arithmetic?

Recursive: $\qquad$

Explicit: $\qquad$
Find the $13^{\text {th }}$ term: $\qquad$
9. $\frac{1}{2}, \frac{3}{4}, \frac{5}{8}, \frac{7}{16}, \ldots$

Arithmetic? $\qquad$

Recursive: $\qquad$

Explicit: $\qquad$
Find the $39^{\text {th }}$ term: $\qquad$
10. $-10,-7,-4,-1, \ldots$

Arithmetic? $\qquad$

Recursive: $\qquad$

Explicit: $\qquad$

Find the $114^{\text {th }}$ term: $\qquad$
11. $-12.3,-9.7,-7.1,-4.5, \ldots$

Arithmetic?

Recursive: $\qquad$

Explicit: $\qquad$
Find the $-4^{\text {th }}$ term: $\qquad$

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. $0.02,1.08,2.14,3.2, \ldots$

Arithmetic? $\qquad$

Recursive: $\qquad$

Explicit: $\qquad$
Find the $-11^{\text {th }}$ term: $\qquad$
13. $2,-3,4,-5,6, \ldots$

Arithmetic? $\qquad$

Recursive: $\qquad$

Explicit: $\qquad$
Find the $17^{\text {th }}$ term: $\qquad$
14. $21,19,17,15, \ldots$

Arithmetic? $\qquad$

Recursive: $\qquad$

Explicit: $\qquad$

Find the $44^{\text {th }}$ term: $\qquad$
15. $-\frac{1}{2}, 0, \frac{1}{2}, 1, \ldots$

Arithmetic? $\qquad$

Recursive: $\qquad$

Explicit: $\qquad$
Find the $17^{\text {th }}$ term: $\qquad$
16. $-2,4,10,16, \ldots$

Arithmetic? $\qquad$

Recursive: $\qquad$

Explicit: $\qquad$

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

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. $-\frac{3}{5},-\frac{1}{5}, 0, \frac{1}{5}, \ldots$

Arithmetic? $\qquad$

Recursive: $\qquad$

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

For the following questions:
a) Find the next 3 terms in each sequence.
b) Write a recursive equation.
c) Write an explicit equation.
18.

| $\boldsymbol{x}$ | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\boldsymbol{f}(\boldsymbol{x})$ | 2.6 | -1.1 | -4.8 | -8.5 |  |  |  |  |

b) $\qquad$
c) $\qquad$
19.

| $\boldsymbol{x}$ | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\boldsymbol{f}(\boldsymbol{x})$ | 52 | 46 | 40 | 34 |  |  |  |  |

b) $\qquad$
c) $\qquad$
20.

| $\boldsymbol{x}$ | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\boldsymbol{f}(\boldsymbol{x})$ | $\frac{\mathbf{1}}{\mathbf{2}}$ | $\mathbf{1} \frac{\mathbf{1}}{\mathbf{4}}$ | $\mathbf{2}$ | $\mathbf{2} \frac{\mathbf{3}}{\mathbf{4}}$ | $\mathbf{3} \frac{\mathbf{1}}{\mathbf{2}}$ |  |  |  |

b) $\qquad$
c) $\qquad$

