

Math Sheet

Name _____ Score _____ Teacher _____ Date _____

General Sequences

Use one simple possible pattern for each term list. For each given formula, write the first four terms starting at $n = 1$.

1. Continue each list with the selected responses · one possible simple pattern

1. 10, 20, 40, 80, ...

Next 3: _____

Explicit: _____

Recursive: _____

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

Next 3: _____

Explicit: _____

Recursive: _____

3. 8, 11, 14, 17, ...

Next 3: _____

Explicit: _____

Recursive: _____

4. 3, 9, 27, 81, ...

Next 3: _____

Explicit: _____

Recursive: _____

5. 78, 75, 70, 63, ...

Next 3: _____

Explicit: _____

Recursive: _____

6. 59, 57, 53, 45, ...

Next 3: _____

Explicit: _____

Recursive: _____

2. Write the first four terms, starting at $n = 1$

7. $a_1 = 1$

$a_n = a_{n-1} + (2n - 1) \quad n \geq 2$

8. $a_n = 86 - n^2$

9. $a_n = 4n - 5$

10. $a_1 = 5$

$a_n = a_{n-1} + 5 \quad n \geq 2$

11. $a_n = 5 + 10 \cdot \frac{n(n-1)}{2}$

12. $a_1 = 87$

$a_n = a_{n-1} - 5 \quad n \geq 2$

Math Sheet

Name _____ Score _____ Teacher _____ Date _____

General Sequences

Answer Key

Use one simple possible pattern for each term list. For each given formula, write the first four terms starting at $n = 1$.

1. Continue each list with the selected responses · one possible simple pattern

1. 10, 20, 40, 80, ...

Next 3: 160, 320, 640

Explicit: $a_n = 5 \cdot 2^n$

Recursive: $a_1 = 10$

$a_n = 2a_{n-1}$ $n \geq 2$

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

Next 3: 25, 30, 35

Explicit: $a_n = 5n$

Recursive: $a_1 = 5$

$a_n = a_{n-1} + 5$ $n \geq 2$

3. 8, 11, 14, 17, ...

Next 3: 20, 23, 26

Explicit: $a_n = 3n + 5$

Recursive: $a_1 = 8$

$a_n = a_{n-1} + 3$ $n \geq 2$

4. 3, 9, 27, 81, ...

Next 3: 243, 729, 2187

Explicit: $a_n = 3^n$

Recursive: $a_1 = 3$

$a_n = 3a_{n-1}$ $n \geq 2$

5. 78, 75, 70, 63, ...

Next 3: 54, 43, 30

Explicit: $a_n = 79 - n^2$

Recursive: $a_1 = 78$

$a_n = a_{n-1} - (2n - 1)$ $n \geq 2$

6. 59, 57, 53, 45, ...

Next 3: 29, -3, -67

Explicit: $a_n = 61 - 2^n$

Recursive: $a_1 = 59$

$a_n = a_{n-1} - 2^{n-1}$ $n \geq 2$

2. Write the first four terms, starting at $n = 1$

7. $a_1 = 1$

$a_n = a_{n-1} + (2n - 1)$ $n \geq 2$

1, 4, 9, 16

8. $a_n = 86 - n^2$

85, 82, 77, 70

9. $a_n = 4n - 5$

-1, 3, 7, 11

10. $a_1 = 5$

$a_n = a_{n-1} + 5$ $n \geq 2$

5, 10, 15, 20

11. $a_n = 5 + 10 \cdot \frac{n(n-1)}{2}$

5, 15, 35, 65

12. $a_1 = 87$

$a_n = a_{n-1} - 5$ $n \geq 2$

87, 82, 77, 72