**NC Math 1B Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Unit 6 Lesson 4 Homework: Explicit Arithmetic Sequence**

1. You have a part-time job and are able to save $20.00 each week. You save this money in a safe box with a lock on it at home.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **week** | 1 | 2 | 3 | 4 | 5 | … | 36 |
| **total savings** |  |  |  |  |  | … |  |

Common difference d = \_\_\_\_\_\_\_\_\_\_

Recursive Formula: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Explicit Formula: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **n** | 1 | 2 | 3 | 4 | 5 | … | 20 |
| ***a*n** |  |  |  |  |  | … |  |

2.

Common difference d = \_\_\_\_\_\_\_\_\_\_\_\_

Recursive Formula: $a\_{1}=22$ ; $a\_{n}=a\_{n-1}-4$

Explicit Formula: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **n** | 1 | 2 | 3 | 4 | 5 | … | 22 | … | 73 |
| ***k*n** |  |  |  |  |  | … |  | … |  |

3.

Common difference d = \_\_\_\_\_\_\_\_\_\_\_\_

Recursive Formula: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Explicit Formula: $k\_{n}=16-5(n-1)$

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **n** | 1 | 2 | 3 | 4 | 5 | … |  |
| ***a*n** | 4 | 7 | 10 | 13 |  | … | 301 |

4.

Common difference d = \_\_\_\_\_\_\_\_\_

Recursive Formula: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Explicit Formula: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. For each arithmetic sequence below find the common difference (*d)*, write the explicit formula, and find the value of the indicated term – Be sure to show work!

 a) $5, 9, 13, 17, ….$ b) $-20, -15, -10, -5, …$

Common Difference: \_\_\_\_\_\_\_\_\_\_\_ Common Difference: \_\_\_\_\_\_\_\_\_\_\_

 Explicit Formula: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Explicit Formula: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 $A\_{11}=$ \_\_\_\_\_\_\_\_\_\_\_\_ $A\_{9}=$ \_\_\_\_\_\_\_\_\_\_\_\_

 c) $6.2, 12.2, 18.2, 24.2, …$ d) $8.4, 15.5, 22.6, 29.7, …$

Common Difference: \_\_\_\_\_\_\_\_\_\_\_ Common Difference: \_\_\_\_\_\_\_\_\_\_\_

 Explicit Formula: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Explicit Formula: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 $A\_{57}=$ \_\_\_\_\_\_\_\_\_\_\_\_ $A\_{7}=$ \_\_\_\_\_\_\_\_\_\_\_\_

6. Multiple Choice: The Wimba Tree in the Amazon rain forest grows an average of 2.3 cm per week. This growth is

modeled by the following recursive formula:

$$\left\{\begin{array}{c}a\_{1}=700\\a\_{n}=a\_{n-1}+2.3\end{array}\right.$$

where *n* is the number of weeks that have passed. How tall is the tree after 8 weeks?

1. 71.38 B. 716.10 C. 718.4 D. 720.7 E. 723

7. Given the recursive formula: $A\_{n+1}=9.7+A\_{n}$; $A\_{1}=12.2, $write the first seven terms of the sequence.