Practice test for ch5

Part one. Determine if a given value can be a value of a term of a term in an arithmetic sequence in the t(n) notation.

 Why we have this problem. Term numbers can only be whole numbers. If you are given a possible term value to consider. You should be able to plug the value into an arithmetic equation and solve for an term (n) that is a whole number

Determine if 361 can be a term in the sequences that the following arithmetic equations represent. If so what term number is it

Example

1. T(n) = 3n + 25 b) T(n)=7(n) + 20 c) t(n) = 4(n-1) + 12

361 = 3n + 25

-25 -25

336 = 3n

112 = n, So we can say that

T(112) = 336 which means that the

112th term in the sequence has a value

of 336.

Because when you got inserted 361 for T(n), and then solved for the term number (n) you got a whole number, 336 is a valid term value, further we know that it will be the 112th term in the sequence.

Try b and c

Part two

Given a sequence, you should be able to determine the generator (what makes the pattern work), write the recursive equation, and the explicit equation.

Example

1. 4, 16, 64, … generator (multiply by 4), Recursive equation t(n) = t(n-1)(4) Explicit equation $t\left(n\right)=(4)(4)^{n-1}$
2. 7, 14, 28, … generator (multiply by 2), recursive equation t(n)= t(n-1)(2) Explicit equation

 $t\left(n\right)=(7)(2)^{n-1}$

1. 13,15,17… generator (adding 2), recursive equation t(n) = t(n-1)+2 Explicit equation
	1. $t\left(n\right)=13+2(n-1)$
2. 8, 12.5, 17, …. Generator\_\_\_\_\_\_\_\_\_\_\_ recursive equation\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Explicit equation\_\_\_\_\_\_\_\_\_\_\_\_\_

1. 31, 25, 19, … Generator\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ recursive equation\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Explicit equation\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. 12, 36, 108, ... Generator\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Recursive equation\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Explicit equation\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. 125, 25, 5, … generator\_\_\_\_\_\_\_\_\_\_\_\_\_ recursive equation\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Explicit equation\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Part 3 Given a table or a graph determine if it is an arithmetic sequence, geometric sequence or neither.

1. Example



The sequence is 10, 15, 20, …

Therefore I know it is Arithmetic because the generator is adding 5 repeatedly

b)



The sequence is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Therefore I know the sequence is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because the generator is \_\_\_\_\_\_\_\_\_\_\_\_\_

1. Example



The sequence is 2, 5, 8 ….

Therefore I know the sequence is arithmetic because the generator is adding 3

d)

 

The sequence is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The generator is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, therefore you I know the sequence is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e)Example

 

The sequence goes 1, ½, ¼, 1/8,

The generator is dividing by 2 repeatedly, since division is a type of multiplication this is a geometric sequence

f)

 

The sequence goes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The generator is \_\_\_\_\_\_\_\_\_\_\_, therefore I know it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_sequence

g)Example

|  |  |
| --- | --- |
| N | T(n) |
| 1 | 3 |
| 2 | 12 |
| 3 | 48 |
| 4 | 192 |

The sequence goes 3, 12, 48, 192, …

The generator is multiplying by 4, therefore I know this is a geometric table

H)

|  |  |
| --- | --- |
| n | T(n) |
| 1 | 5 |
| 2 | 15 |
| 3 | 45 |
| 4 | 135 |

The sequence goes \_\_\_\_\_\_\_\_\_\_\_\_\_

The generator is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, therefore this is a \_\_\_\_\_\_\_\_\_\_\_\_sequence.