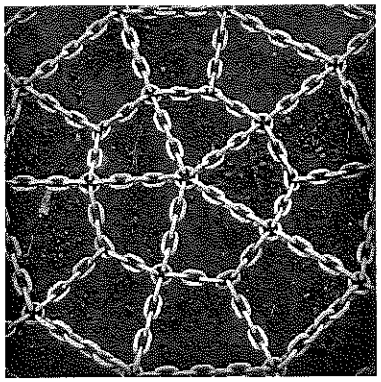
1.5 Don't Break the Chain

A Solidify Understanding Task



Maybe you've received an email like this before:

> Hi! My name is Bill Weights, founder of Super Scooper Ice Cream. I am offering you a gift certificate for our signature "Super Bowl" (a $4.95 value) if you forward this letter to 10 people.
>
> When you have finished sending this letter to 10 people, a screen will come up. It will be your Super Bowl gift certificate. Print that screen out and bring it to your local Super Scooper Ice Cream store. The server will bring you the most wonderful ice cream creation in the world—a Super Bowl with three yummy ice cream flavors and three toppings!
>
> This is a sales promotion to get our name out to young people around the country. We believe this project can be a success, but only with your help. Thank you for your support.
>
> Sincerely,
>
> Bill Weights
> Founder of Super Scooper Ice Cream

These chain emails rely on each person that receives the email to forward it on. Have you ever wondered how many people might receive the email if the chain remains unbroken? To figure this out, assume that it takes a day for the email to be opened, forwarded, and then received by the next person. On day 1, Bill Weights starts by sending the email out to his 8 closest friends. They each forward it to 10 people so that on day 2 it is received by 80 people. The chain continues unbroken.

1. How many people will receive the email on day 7?

2. How many people with receive the email on day n? Explain your answer with as many representations as possible.

3. If Bill gives away a Super Bowl that costs $4.95 to every person that receives the email during the first week, how much will he have spent?

READY, SET, GO! **Name** **Period** **Date**

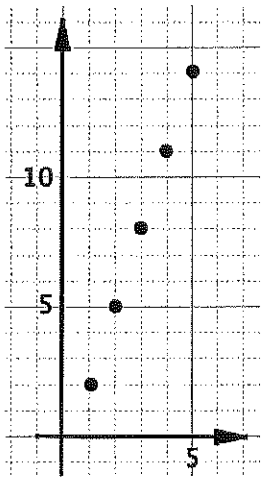
READY

Topic: Rates of change in a table and a graph

The same sequence is shown in both a table and a graph. Indicate on the table where you see the rate of change of the sequence. Then draw on the graph where you see the rate of change.

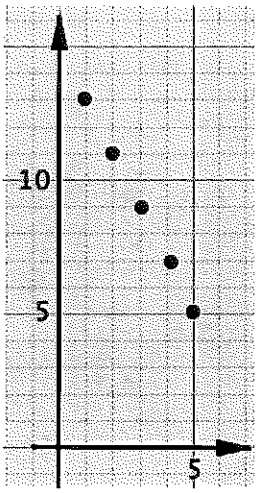
1.

n	$f(n)$
1	2
2	5
3	8
4	11
5	14



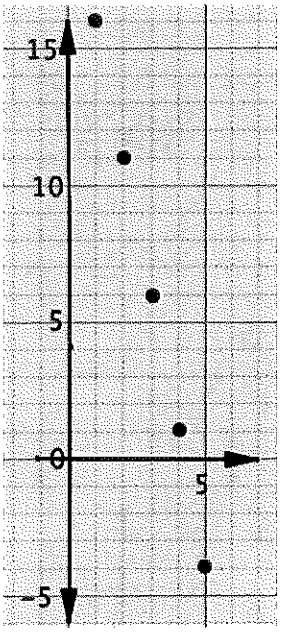
2.

n	$f(n)$
1	13
2	11
3	9
4	7
5	5



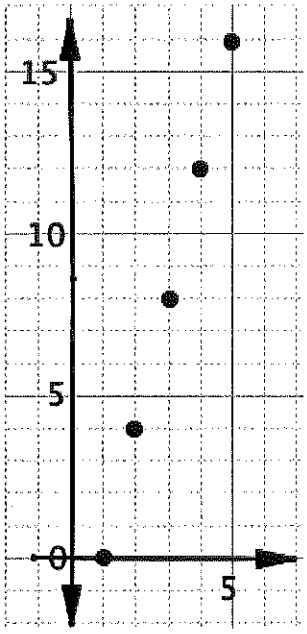
3.

n	$f(n)$
1	16
2	11
3	6
4	1
5	−4



4.

n	$f(n)$
1	0
2	4
3	8
4	12
5	16

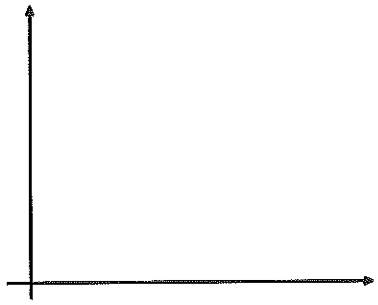


SET

Topic: Recursive and explicit functions of **geometric** sequences

Below you are given various types of information. Write the recursive and explicit functions for each geometric sequence. Finally, graph each sequence, making sure you clearly label your axes.

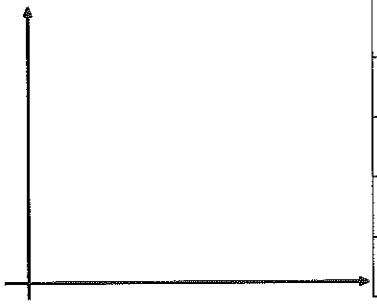
5. 2 , 4 , 8 , 16 , ...



Recursive:_____

Explicit:_____

6.



Time (days)	Number of cells
1	3
2	6
3	12
4	24

Recursive:_____

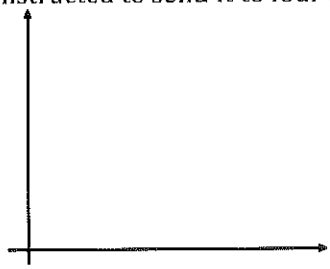
Explicit:_____

7. Claire has $300 in an account. She decides she is going to take out half of what's left in there at the end of each month.

Recursive:_____

Explicit:_____

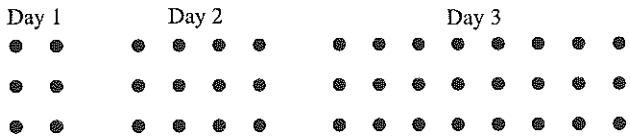
8. Tania creates a chain letter and sends it to four friends. Each day each friend is then instructed to send it to four friends and so forth.

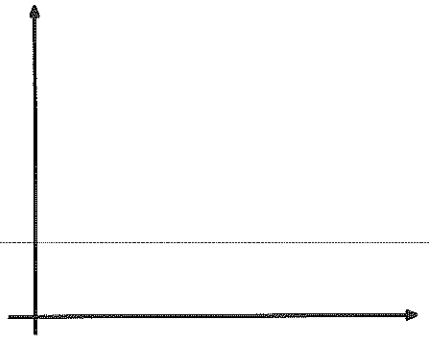


Recursive:_____

Explicit:_____

9.





Recursive:_____

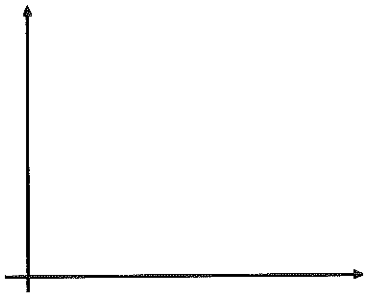
Explicit:_____

GO

Topic: Recursive and explicit functions of **arithmetic** sequences

Below you are given various types of information. Write the recursive and explicit functions for each arithmetic sequence. Finally, graph each sequence, making sure you clearly label your axes.

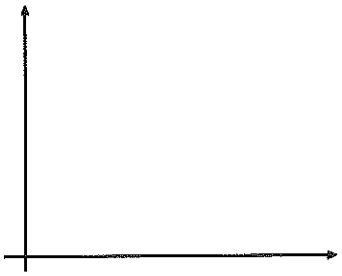
10. 2 , 4 , 6 , 8 , ...



Recursive:_____

Explicit:_____

11.

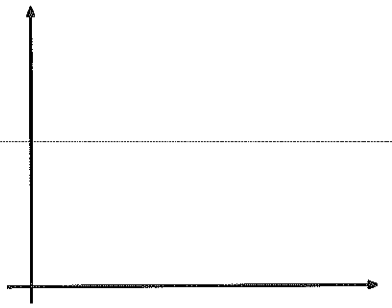


Time (days)	Number of cells
1	3
2	6
3	9
4	12

Recursive:_____

Explicit:_____

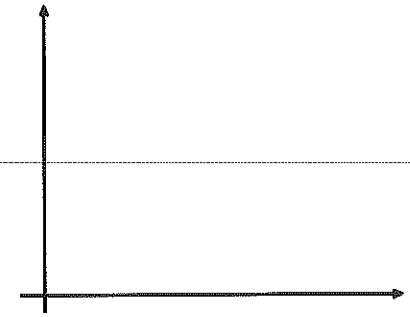
12. Claire has $300 in an account. She decides she is going to take out $25 each month.



Recursive:_____

Explicit:_____

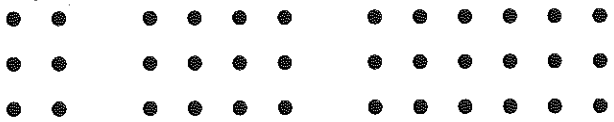
13. Each day Tania decides to do something nice for 2 strangers. What is the relationship between the number people helped and days?



Recursive:_____

Explicit:_____

14.



Recursive:_____

Explicit:_____