

### Finding the $n$ th Term

Name Solutions Period \_\_\_\_\_ Date \_\_\_\_\_

For Exercises 1-4, tell whether the rule is a linear function.

1. 

$n$	1	2	3	4	5
$f(n)$	8	15	22	29	36

*Linear*

2. 

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

*Linear*

3. 

$n$	1	2	3	4	5
$h(n)$	-9	-6	-2	3	9

*NOT Linear*

4. 

$n$	1	2	3	4	5
$j(n)$	$-\frac{3}{2}$	-1	$-\frac{1}{2}$	0	$\frac{1}{2}$

*LINEAR*

For Exercises 5 and 6, complete each table.

5. 

$n$		1	2	3	4	5
$f(n) = 7n - 12$		-5	2	9	16	23

6. 

$n$		1	2	3	4	5
$g(n) = -8n - 2$		-10	-18	-26	-34	-42

For Exercises 7-9, find the function rule for each sequence. Then find the 50th term in the sequence.

7. 

$n$	1	2	3	4	5	6	...	$n$	...	50
$f(n)$	9	13	17	21	25	29	...	$4n + 5$	...	205

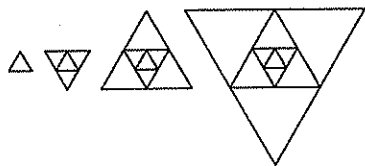
8. 

$n$	1	2	3	4	5	6	...	$n$	...	50
$g(n)$	6	1	-4	-9	-14	-19	...	$-5n + 11$	...	-239

9. 

$n$	1	2	3	4	5	6	...	$n$	...	50
$h(n)$	6.5	7	7.5	8	8.5	9	...	$\frac{1}{2}n + 6$	...	31

10. Use the figures to complete the table.



$n$	1	2	3	4	5	...	$n$	...	50
Number of triangles	1	5	9	13	17	...	$4n - 3$	...	197

11. Use the figures above to complete the table. Assume that the area of the first figure is 1 square unit.

$n$	1	2	3	4	5	...	$n$	...	50
Area of figure	1	4	16	64	256	...	$4^{n-1}$	...	$4^{49}$