The nth term of a quadratic sequence

1

Find the second difference of 2, 5, 10, 17, 26.

2	5	10	17	26
3	5	7	9	

Second difference _____

2

Find the second difference of 1, 7, 17, 31, 49.

1	7	17	31	49
6				

Second difference _____

3

Find the nth term of 4, 7, 12, 19, 28.

4	7	12	19	28
3	5	7	9	
2	2	2		

2 ÷ 2 = 1 $\quad$ 1 n^2

sequence	4	7	12	19	28
the n^2 part	1				
what is left					

nth term _____

4

Find the nth term of 3, 9, 19, 33, 51.

3	9	19	33	51
6				

□ ÷ 2 = □ $\quad$ □ n^2

sequence	3	9	19	33	51
the n^2 part	2				
what is left					

nth term _____

5

Find the nth term of 5, 14, 29, 50, 77.

5	14	29	50	77

□ ÷ 2 = □ $\quad$ □ n^2

sequence	5	14	29	50	77
the n^2 part					
what is left					

nth term _____

6

Find the nth term of 4, 10, 18, 28, 40.

4	10	18	28	40
6	8	10	12	
2	2	2		

2 ÷ 2 = 1 $\quad$ 1 n^2

sequence	4	10	18	28	40
the n^2 part	1	4	9	16	25
what is left	3				

nth term of what is left _____

nth term _____

7

Find the nth term of 5, 9, 15, 23, 33.

5	9	15	23	33
4				

□ ÷ 2 = □ $\quad$ □ n^2

sequence	5	9	15	23	33
the n^2 part					
what is left					

nth term of what is left _____

nth term _____

8

Find the nth term of 3, 10, 21, 36, 55.

3	10	21	36	55

□ ÷ 2 = □ $\quad$ □ n^2

sequence	3	10	21	36	55
the n^2 part					
what is left					

nth term of what is left _____

nth term _____

The nth term of a quadratic sequence *further practice*

9

Find the nth term of 0, 3, 8, 15, 24.

Answer _____

10

Find the nth term of 3, 12, 27, 48, 75.

Answer _____

11

Find the nth term of 6, 14, 24, 36, 50.

Answer _____

12

The nth term of a sequence is $n^2 + 4$.
Find the 10th term.

Answer _____

13

A sequence starts 4, 12, 24, 40, 60.
Find its nth term and its 10th term.

Answer _____

14

A marble rolls down a slope.
The distances make a quadratic sequence. How far has it rolled after 10 seconds?

seconds	1	2	3	4
distance (cm)	3	10	21	36

Answer _____

15

The nth term of a sequence is $n^2 + 6$.
Is 150 in the sequence?
Show how you know.

Answer _____

16

Jo says the nth term of 2, 9, 20, 35, 54 is $4n^2 - 2$, because the second difference is 4. Explain her mistake and find the right nth term.

Answer _____