

11.1 day 1

Wednesday, April 19, 2017 8:07 AM

Algebra 2 Trig H

11.1 Day 1

Sequence: List of numbers separated by commas

Write the first four terms of the sequence. Examples 1-6 have EXPLICIT formulas.

1. $a_n = 2n$

$$a_1 = 2 \cdot 1 = 2$$

$$a_2 = 2 \cdot 2 = 4$$

$$a_3 = 2 \cdot 3 = 6$$

$$a_4 = 2 \cdot 4 = 8$$

2, 4, 6, 8 term
1 2 3 4 term #

2. $a_n = 3(n-2) + 4$

$$a_1 = 3(1-2) + 4 = 1$$

$$a_2 = 3(2-2) + 4 = 4$$

$$a_3 = 3(3-2) + 4 = 7$$

$$a_4 = 3(4-2) + 4 = 10$$

1, 4, 7, 10
1 2 3 4

3. $a_n = (n+1)^3$

$$8, 27, 64, 125$$

4. $a_n = \frac{n-2}{n+2}$

$$-\frac{1}{3}, 0, \frac{1}{5}, \frac{1}{3}$$

5. $a_n = (-1)^{n+1}(5n+2)$

$$7, -12, 17, -22$$

6. $a_n = \left(2 + \frac{1}{n}\right)^n$

$$3, \frac{25}{4}, \frac{343}{27}, \frac{6561}{256}$$

Find the 100th term of the sequence in...

7. #4

$$a_{100} = \frac{100-2}{100+2}$$

$$= \frac{98}{102}$$

$$= \frac{49}{51}$$

8. #2

$$a_{100} = 3(100-2) + 4$$

$$= 300 - 6 + 4$$

$$= 298$$

Write a general term for a_n .

0 11, 13, 15, 17, ...

1		11	$a_n = 2n + 9$
2		13	
3		15	
4		17	

$a_n = 2(n-1) + 11$

Alternating

12. 11, -13, 15, -17, ...

$$a_n = (-1)^{n+1} (2n+9)$$

13. $\frac{2}{5}, \frac{3}{6}, \frac{4}{7}, \frac{5}{8}, \dots$

$$a_n = \frac{n+1}{n+4}$$

14. 4, -16, 64, -256, ...

$$a_n = (-1)^{n+1} \cdot 4^n$$

15. $\frac{x^2}{3}, \frac{x^3}{4}, \frac{x^4}{5}, \frac{x^5}{6}, \dots$

$$a_n = \frac{x^{n+1}}{n+2}$$

16. 4, 27, 256, ...

$$a_n = (n+1)^{n+1}$$

17. 6, 12, 20, 30, 42, ...

2·3, 3·4, 4·5, 5·6, 6·7, ...

1 2 3 4 5

$$a_n = (n+1)(n+2)$$

18. $-2, \frac{5}{3}, -\frac{3}{2}, \frac{7}{5}, \dots$

$-\frac{4}{2}, \frac{5}{3}, -\frac{6}{4}, \frac{7}{5}$

$$a_n = (-1)^n \frac{n+3}{n+1}$$