

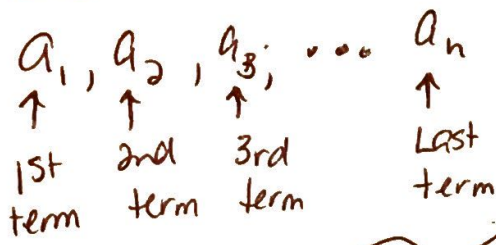
Assignment

P. 618 (7-17 odd
23, 25, 37-45 odd)

9.1 Sequences and Series (Part 1)

(Can go to calcview.com to see other examples or us the QR code)

Finite Sequences



Infinite

a_1, a_2, a_3, \dots (keeps going)

★ Find 1st 5 terms

⑧ $a_n = -2n + 8$

n-value	$a_1 = -2(1) + 8 = 6$	← seeing a pattern (Subtr. 2)
n=1	$a_2 = -2(2) + 8 = 4$	
	$a_3 = -2(3) + 8 = 2$	
	$a_4 = \quad = 0$	
	$a_5 = \quad = -2$	

★ Find the missing term

②③ $a_n = (-1)^n (3n - 2)$

n=25 $a_{25} = (-1)^{25} (3(25) - 2)$

$$\begin{aligned}
 &= -1(75 - 2) \\
 &= -1(73) \\
 &= \boxed{-73}
 \end{aligned}$$

★ Write an expression for n^{th} term ($a_n = \underline{\quad}$)

(Some of these will be hard, it is a guessing game, find a pattern; add, subtract, mult, powers, divide. Later we will learn how to find without guessing)

④⑦ $n=1, 2, 3, 4, 5, \dots$
 $91, 82, 73, 64, 55, \dots$

$\begin{array}{cccc} \vee & \vee & \vee & \vee \\ -9 & -9 & -9 & -9 \end{array}$ (subtract 9)

so $91 + 9 = 100$

n=1 $100 - 9 = 82$

n=2 $100 - 9 - 9 = 100 - 9(2) = 73$

n=3 $100 - 9 - 9 - 9 = 100 - 9(3) = 64$

$100 - 9n = a_n$

③⑧ $n=1, 2, 3, 4, 5, \dots$
 $0, 3, 8, 15, 24, \dots$

$a_1 = 1 - 1 = 0 = a_1$	$a_1 = 1(0) = 0 = a_1$
$a_2 = 2 - 1 = 1 \neq a_2$	$a_2 = 2(0) = 0 \neq a_2$

Lets try a power

n $a_3 = 3^2 - 1 = 8$

so

$a_n = n^2 - 1$

n $a_1 = 1^2 - 1 = 0$

$a_2 = 2^2 - 1 = 3$