

# Station 6

The terms in the sequence 6, 2, -4, -6, -2, 4, ... can be found using which formula?

(a)  $a_n = a_{n-2} - a_{n-1}$ ,  $a_1 = 6$  and  $a_2 = 2$

(b)  $a_n = 6 + (n - 1)4$

(c)  $a_n = a_{n-1} - a_{n-2}$ ,  $a_1 = 6$  and  $a_2 = 2$

(d) There is no formula that works.

The first term of an arithmetic sequence is  $a_1 = 3$  and the eleventh term is  $a_{11} = 23$ . Find the  $n^{\text{th}}$  term,  $a_n$ , of the sequence.

(a)  $a_n = 3 + 23(n - 1)$

(b)  $a_n = 23 + 10(n - 1)$

(c)  $a_n = 3 + 2(n - 1)$

(e)  $a_n = 23 + 2(n - 1)$

Calculate the sum

$$\sum_{k=1}^{200} 2k + 5.$$

(a) 18,500

(b) 22,700

(c) 29,200

(d) 38,500

(e) 41,200

Calculate the sum of the arithmetic series

$$3 + 7 + 11 + \dots + 123.$$

(a) 141

(b) 1953

(c) 3906

(d) 7560

(e) 13530

Find the common ratio of the geometric sequence

$$4, 2, 1, \dots$$

(a) 2

(b)  $\frac{1}{4}$

(c) 4

(d)  $\sqrt{2}$

(e)  $\frac{1}{2}$

The  $n^{\text{th}}$  term of the geometric sequence

$$3, -6, 12, -24, \dots$$

(a)  $a_n = 3(-2)^{n-1}$

(b)  $a_n = 2(-3)^n$

(c)  $a_n = 2(3)^{n-1}$

(d)  $a_n = 3(-2)^n$

(e)  $a_n = 3(2)^{n-1}$

Find the sum of the first 8 terms of the geometric sequence

$$1, 2, 4, 8, \dots$$

(a) 255

(b) 16

(c) -256

(d) 128

(e) -128

7.  
6.  
5.  
4.  
3.  
2.

1.