

# Station 7

Find the sum of the infinite series

$$\sum_{k=0}^{\infty} 5^k \left(\frac{2}{3}\right)^k$$

- (a) 0      (b)  $\frac{3}{10}$       (c) 5      (d) 15      (e)  $\infty$

Find the 5<sup>th</sup> term of the sequence

$$a_n = 2(n-1)^2 - 3.$$

- (a) -3      (b) 47      (c) 29      (d) 5      (e) 53

Find the 5<sup>th</sup> term of the recursive sequence

$$a_{k+1} = 2a_k - 1$$

where  $a_1 = 2$ .

- (a) 17      (b) 10      (c) 9      (d) 5      (e) 2

Find the 8<sup>th</sup> term of the recursive sequence

$$a_{k+1} = a_k + a_{k-1}$$

where  $a_1 = 2$  and  $a_2 = 3$ .

- (a) 34      (b) 55      (c) 99      (d) 102      (e) 19

Compute the sum

$$\sum_{k=1}^3 \frac{1}{k}$$

- (a)  $\frac{3}{1}$       (b)  $\frac{6}{11}$       (c)  $\frac{5}{3}$       (d)  $\frac{1}{2}$       (e) 6

Find the  $n^{\text{th}}$  term of the arithmetic sequence

-8, -5, -2, 1, 4, ...

- (a)  $a_n = -8 + 3(n-1)$       (b)  $a_n = -8(3)^{n-1}$       (c)  $a_n = -8 - 3n$

(d)  $a_n = -8^n$

Find the two-hundredth term,  $a_{200}$ , of the sequence

2, 5, 8, 11, ...

- (a) 399      (b) 499      (c) 599      (d) 603      (e) 583

1. 2. 3. 4. 5. 6. 7.