

1. Write $\sum_{k=1}^7 |3\pi - 2k|$ as an expanded sum and evaluate the sum.

2. Consider the sum of all four digit positive integers that are divisible by 3.

(a) Write the sum in summation notation.

(b) Evaluate the sum.

3. If $\sum_{b=2}^4 (a^2b - ab) = \sum_{c=3}^5 (ac + 6)$, determine a .

4. Consider the series

$$-4 + 1 + 6 + 11 + \dots + 41$$

- (a) For the sequence $-4, 1, 6, 11, \dots, 41$
- What kind of sequence is it?
 - Find a formula for the sequence.
 - How many terms are in the sequence?
- (b) Express the sum in summation notation.
- (c) Evaluate the sum.

5. Consider the infinite series

$$\frac{7}{8} + \frac{7}{16} + \frac{7}{32} + \dots$$

- (a) For the sequence $\frac{7}{8}, \frac{7}{16}, \frac{7}{32}, \dots$
- What kind of sequence is it?
 - Find a formula for the sequence.
- (b) Express the sum in summation notation.
- (c) Evaluate the sum.

6. True or False: An arithmetic series with $d \neq 0$ will diverge.

7. Consider the series $\sum_{n=1}^{\infty} a_n$ and suppose $\lim_{n \rightarrow \infty} a_n = L$. If the series converges, what do you know about L ?

8. Suppose $\sum_{n=1}^{\infty} 5r^{n-1} = 20$. Find r .

9. Suppose $\sum_{n=1}^{20} a_n = 35$ and $\sum_{n=1}^{30} a_n = 60$. Find $\sum_{n=21}^{30} a_n$.