

Brett Robbins Academic Consulting

Mathematics 20-1 Practice Test

Unit 1: Sequences and Series

10 Questions

Original practice questions written to the Alberta curriculum, in the style of past diploma examinations. Work through each question, then check your answers with the key at the end.

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, contact Brett for clarification.

Question 1

The common difference of the arithmetic sequence 7, 13, 19, 25, ... is

- A) 5
B) 20
C) 6
D) 7

Question 2

An arithmetic sequence has first term 4 and common difference 3.

The general term of the sequence is

- A) $t_n = 3n + 4$ B) $t_n = 4n + 3$
C) $t_n = 3n - 1$ D) $t_n = 3n + 1$

Question 3

The 15th term of the arithmetic sequence 3, 8, 13, ... is

- A) 73
B) 68
C) 78
D) 75

Question 4

The 6th term of the geometric sequence 5, 15, 45, ... is

- A) 405 B) 3645
C) 243 D) 1215

Question 5

The sum of the first 20 terms of the arithmetic sequence 2, 5, 8, ... is ____.

Question 6

An arithmetic sequence has $t_1 = 9$ and common difference -2 .

If $t_n = -31$, then the value of n is

- A) 19
- B) 21
- C) 20
- D) 22

Question 7

The two arithmetic means between 8 and 29 are

- A) 13 and 20
- B) 14 and 21
- C) 15 and 22
- D) 16 and 23

Question 8

The sum of the first 6 terms of the geometric series $3 + 6 + 12 + \dots$ is

- A) 189
- B) 96
- C) 381
- D) 192

Question 9

The sum of the infinite geometric series with $t_1 = 12$ and common ratio $\frac{1}{4}$ is

- A) undefined, since the series diverges
- B) 9
- C) 15
- D) 16

Question 10

A ball is dropped from a height of 12 m. Each time it bounces, it rebounds to $\frac{3}{4}$ of its previous height. The total distance travelled by the ball, in metres, until it comes to rest is _____.

Answer Key

- | | | |
|------|--------|--------|
| 1. C | 5. 610 | 9. D |
| 2. D | 6. B | 10. 84 |
| 3. A | 7. C | |
| 4. D | 8. A | |

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, contact Brett for clarification.