CALIFORNIA PRECALCULUS · UNIT 4 · 25 QUESTIONS

Sequences, Series, and Limits — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 $\lim_{x \to 3} x^2 - 9/x - 3$ is

- A 9
- B 6
- C 0
- D 3

Understand It with Pulse | Flag a mistake

2 $\lim_{x \to \infty} 2x + 1/x - 3$ is

- A 2
- B 0
- C 1
- D ∞

Understand It with Pulse | Flag a mistake

3 For $a_n = 3n - 1$, the term a_5 is

- A 16
- B 14
- C 15
- D 11

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4 For the arithmetic sequence with $a_1 = 3$ and $d = 4$, the term a_{10} is

- A 39
- B 43
- C 40
- D 35

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5 For the geometric sequence 2, 6, 18, …, the term a_4 is

- A 48
- B 36
- C 54
- D 72

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6 $\lim_{x \to \infty} \frac{1}{x}$ is

- A -1
- B 0
- C 1
- D ∞

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7 $\lim_{x \to 2} (3x + 1)$ is

A 9

B 5

C 7

D 6

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8 The limit of the sequence $2n + 1/n$ as $n \to \infty$ is

A 0

B ∞

C 1

D 2

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9 For $a_1 = 2$ and $a_{n+1} = 2a_n + 1$, the term a_3 is

- A 7
- B 5
- C 11
- D 9

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10 $\lim_{x \to 0} x^2 + 2x/x$ is

- A 4
- B 1
- C 0
- D 2

Understand It with Pulse | Flag a mistake

11 $\lim_{x \to 4} \sqrt{x}$ is

A 2

B 16

C 4

D 1

Understand It with Pulse | Flag a mistake

12 The common difference of 10, 7, 4, … is

A -7

B 7

C -3

D 3

Understand It with Pulse | Flag a mistake

13 **The infinite geometric series 1 - 2 + 4 - cdots**

- **A** diverges
- **B** converges to -1
- **C** converges to $\frac{1}{3}$
- **D** converges to 1

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14 **The infinite geometric series with first term 5 and ratio 2**

- **A** converges to 10
- **B** converges to 5
- **C** converges to -5
- **D** diverges

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15 The sum of the first 4 terms of 2, 5, 8, 11, … is

- A 32
- B 20
- C 26
- D 23

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16 $\lim_{x \to 2} x^2 - 4/x - 2$ is

- A 8
- B 2
- C 4
- D 0

Understand It with Pulse | Flag a mistake

17 $\lim_{x \to \infty} x^2/x^2 + 1$ is

A 2

B 0

C ∞

D 1

Understand It with Pulse | Flag a mistake

18 For $a_n = 2n + 3$, the term a_4 is

A 8

B 9

C 14

D 11

Understand It with Pulse | Flag a mistake

19 For the arithmetic sequence with $a_1 = 5$ and $d = 3$, the term a_6 is

- A 23
- B 18
- C 20
- D 15

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20 For the geometric sequence 5, 10, 20, …, the term a_3 is

- A 30
- B 40
- C 15
- D 20

Understand It with Pulse | Flag a mistake

21 $\lim_{x \to \infty} \frac{7}{x}$ is

A 0

B 7

C 1

D ∞

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22 $\lim_{x \to 3} x^2$ is

ANSWER _____

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23 The limit of the sequence n/n + 1 as n → ∞ is

- A 1
- B ∞
- C $\frac{1}{2}$
- D 0

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24 $\lim_{x \to 2}$ $x^3 - 8/x - 2$ is

- A 12
- B 4
- C 6
- D 8

Understand It with Pulse | Flag a mistake

25 $\lim_{x \to \infty} 3x^2 + 2/x^2$ is

A ∞

B 2

C 0

D 3

Understand It with Pulse

Flag a mistake

ANSWER KEY

1.	B	**10.**	D	**19.**	C
2.	A	**11.**	A	**20.**	D
3.	B	**12.**	C	**21.**	A
4.	A	**13.**	A	**22.**	9
5.	C	**14.**	D	**23.**	A
6.	B	**15.**	C	**24.**	A
7.	C	**16.**	C	**25.**	D
8.	D	**17.**	D		
9.	C	**18.**	D		

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