ARIZONA PRECALCULUS · UNIT 4 · 25 QUESTIONS

Limits, Sequences, and Series — 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 **The limit as x approaches 2 of x^2 - 4/x - 2 is**

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

Understand It with Pulse | Flag a mistake

2 **Let $a_1 = 2$ and $a_n = 3a_{n-1} + 1$. Then a_3 is**

- A 22
- B 19
- C 7
- D 10

Understand It with Pulse | Flag a mistake

3 **The infinite sum 12 + 4 + 4/3 + cdots is**



A 20

B 18

C 36

D 16

Understand It with Pulse | Flag a mistake

4 **The limit as x approaches infinity of $\frac{5}{x}$ is**



A 1

B 0

C infinity

D 5

Understand It with Pulse | Flag a mistake

5 **The limit as x approaches infinity of 3x + 1/2x - 5 is**

A $\frac{3}{2}$

B $\frac{1}{2}$

C 3

D 0

Understand It with Pulse | Flag a mistake

6 **A geometric sequence starts 3, 6, 12. Its fifth term is**



A 36

B 48

C 96

D 24

Understand It with Pulse | Flag a mistake

7 **A geometric sequence starts 5, 10, 20. Its fourth term is**

A 25

B 80

C 30

D 40

Understand It with Pulse | Flag a mistake

8 **An arithmetic sequence has first term 5 and difference 4. Its eighth term is**



A 40

B 29

C 33

D 37

Understand It with Pulse | Flag a mistake

9 **An arithmetic sequence has first term 8 and difference -3. Its fifth term is**

A 20

B -1

C -4

D 5

Understand It with Pulse | Flag a mistake

10 **As x approaches 2 from the left, then 1/x - 2 approaches**

A 0

B negative infinity

C 2

D positive infinity

Understand It with Pulse | Flag a mistake

11 For $a_n = 5n - 2$, the sixth term is

- A 25
- B 23
- C 28
- D 30

Understand It with Pulse | Flag a mistake

12 For $a_n = 2n + 3$, the tenth term is

- A 20
- B 23
- C 13
- D 25

Understand It with Pulse | Flag a mistake

13 **The function f(x) = 1/x - 3 has a vertical asymptote at**

A x = -3

B x = 1

C x = 0

D x = 3

Understand It with Pulse | Flag a mistake

14 **The horizontal asymptote of $y = 2x^2 + 1/x^2 - 4$ is**

A y = -4

B y = 2

C y = 0

D y = 1

Understand It with Pulse | Flag a mistake

15 **The infinite sum 18 + 18/4 + 18/16 + cdots is**



A 36

B 72

C 24

D 22

Understand It with Pulse | Flag a mistake

16 **The limit as h approaches 0 of $(3 + h)^2 - 9/h$ is**

A 9

B 3

C 0

D 6

Understand It with Pulse | Flag a mistake

17 **The limit as x approaches 0 of $x^2 + 2x/x$ is**

A 0

B 2

C 4

D 1

Understand It with Pulse | Flag a mistake

18 **The limit as x approaches 1 of 2x + 5 is**

A 9

B 5

C 2

D 7

Understand It with Pulse | Flag a mistake

19 **The limit as x approaches 4 of x^2 - 3x is**

A 16

B 1

C 4

D 7

Understand It with Pulse | Flag a mistake

20 The limit as x approaches 3 of x^2 - 9/x - 3 is

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

Understand It with Pulse | Flag a mistake

21 Let $a_1 = 1$ and $a_n = 2a_{n-1} + 3$. Then a_3 is

- A 8
- B 11
- C 5
- D 13

Understand It with Pulse | Flag a mistake

22 The infinite sum 10 + 5 + 5/2 + cdots is



A 25

B 15

C 20

D 30

Understand It with Pulse | Flag a mistake

23 The limit as x approaches infinity of $\frac{7}{x^2}$ is

- A infinity
- B 1
- C 7
- D 0

Understand It with Pulse | Flag a mistake

24 The limit as x approaches infinity of $4x^2 + 1/x^2 + 2$ is

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

Understand It with Pulse | Flag a mistake

25 **The limit as x approaches 2 of x^3 - 8/x - 2 is**

A 6

B 4

C 8

D 12

Understand It with Pulse | Flag a mistake

ANSWER KEY

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

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