ARKANSAS PRECALCULUS · FINAL EXAM · 50 QUESTIONS

# Final Exam — 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** **If f(x) = -x + 7, then f(5) is**

- A 12
- B 2
- C -2
- D 7

Understand It with Pulse | Flag a mistake

**2** **The value of sin 30° is**

- A 1
- B $\frac{1}{2}$
- C $\frac{\sqrt{3}}{2}$
- D $\frac{\sqrt{2}}{2}$

Understand It with Pulse | Flag a mistake

**3** The radius of the circle $(x - 2)^2 + (y + 3)^2 = 25$ is

- A 25
- B 5
- C 10
- D 50

Understand It with Pulse | Flag a mistake

**4** $\lim_{x \to 3} x^2$ is

- A 9
- B 6
- C 3
- D 12

Understand It with Pulse | Flag a mistake

**5** If $f(x) = 3x^2 - 2x + 4$, then $f(2)$ is

- **A** 8
- **B** 12
- **C** 10
- **D** 14

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**6** In a right triangle, $\sin\theta = \frac{3}{5}$ and $\cos\theta = \frac{4}{5}$. Then $\tan\theta$ is

- **A** $\frac{3}{4}$
- **B** $\frac{4}{3}$
- **C** $\frac{5}{3}$
- **D** $\frac{5}{4}$

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**7** For the ellipse $\frac{x^2}{36} + \frac{y^2}{16} = 1$, the length of the major axis is

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

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**8** The common difference of 2, 5, 8, 11 is

- A 2
- B 3
- C 5
- D 8

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**9** The domain of $f(x) = \sqrt{3x - 9}$ is

- A $x > 3$
- B $x \leq 3$
- C $x \geq 3$
- D all real numbers

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**10** The identity $\sin^2 \theta + \cos^2 \theta$ equals

- A 0
- B 2
- C $\tan \theta$
- D 1

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**11** The midpoint of (2, 6) and (4, 10) is

- A (3, 8)
- B (6, 16)
- C (1, 2)
- D (3, 2)

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**12** The 5th term of the arithmetic sequence with $a_1 = 4$ and $d = 3$ is

- A 16
- B 13
- C 19
- D 10

Understand It with Pulse | Flag a mistake

13 **The graph of y = -f(x) is the graph of y = f(x) reflected across the**

A y-axis

B origin

C x-axis

D line y = x

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14 **The reference angle for 150° is**

A 60°

B 120°

C 30°

D 150°

Understand It with Pulse | Flag a mistake

**15** The eccentricity of a circle is

- A 1
- B 2
- C 0.5
- D 0

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**16** The sum $1 + \frac{1}{2} + \frac{1}{4} + cdots$ to infinity is

- A 1
- B $\frac{3}{2}$
- C 3
- D 2

Understand It with Pulse | Flag a mistake

17 **If f(x) = 4x - 3, then the value of x for which f(x) = 17 equals**

ANSWER _____

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18 **The graph of y = sin x passes through which point**

A (0, 1)

B $(\frac{\pi}{2}, 1)$

C (π, 1)

D $(\frac{\pi}{2}, 0)$

Understand It with Pulse | Flag a mistake

**19** The graph shows the circle $(x - 1)^2 + (y - 2)^2 = 9$. The radius is

- A 9
- B 6
- C 2
- D 3

Understand It with Pulse | Flag a mistake

**20** The sum of the arithmetic series with $a_1 = 5$, $a_n = 25$, and $n = 5$ is

- A 50
- B 60
- C 65
- D 75

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**21** The graph shows the parabola $y = (x - 2)^2 - 1$. The vertex is

- A (2, -1)
- B (-2, -1)
- C (2, 1)
- D (-2, 1)

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**22** Using the Law of Sines, if $\frac{\sin A}{a} = \frac{\sin B}{b}$, with $a = 8$, $\sin A = \frac{1}{2}$, and $\sin B = \frac{1}{4}$, then b is

ANSWER _____

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23 **A parabola with vertex (0, 0) and focus (0, 2) opens**

A Downward

B Left

C Upward

D Right

Understand It with Pulse | Flag a mistake

24 **The sum of the first 5 terms of 2 + 4 + 6 + 8 + 10 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

25 **If f(x) = x + 1 for x ≥ 0 and f(x) = x - 1 for x < 0, then f(-2) is**

A -1

B 1

C -3

D 3

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26 **The midline of y = 3sin x + 2 is**

A y = 3

B y = 0

C y = 1

D y = 2

Understand It with Pulse | Flag a mistake

27 For $\frac{x^2}{100} + \frac{y^2}{36} = 1$, the semi major axis length is

ANSWER

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28 If a limit from the left is 2 and from the right is 5, then the two sided limit

A Is 2

B Is 5

C Does not exist

D Is 7

Understand It with Pulse | Flag a mistake

29 **If f(x) = x + 2 and g(x) = 3x, then f(g(2)) is**

A 6

B 7

C 8

D 9

Understand It with Pulse | Flag a mistake

30 **The period of y = cos(4x) is**

A $\frac{\pi}{4}$

B $\frac{\pi}{2}$

C $2\pi$

D $4\pi$

Understand It with Pulse | Flag a mistake

**31** The center of $x^2 + y^2 = 36$ is

- A (0, 0)
- B (6, 0)
- C (0, 6)
- D (6, 6)

Understand It with Pulse | Flag a mistake

**32** $\lim_{x \to 5} (2x - 1)$ is

- A 9
- B 10
- C 11
- D 8

Understand It with Pulse | Flag a mistake

**33** If g(x) = 2x + 9, then g(-3) is

- A 15
- B 3
- C -3
- D 6

Understand It with Pulse | Flag a mistake

**34** The value of cos 90° is

- A 1
- B 0
- C -1
- D $\frac{1}{2}$

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35 **The parabola $y = -2x^2 + 3$ opens**

A Upward

B Left

C Right

D Downward

Understand It with Pulse | Flag a mistake

36 **The sequence 10, 7, 4, 1 is**

A Geometric

B Neither

C Both

D Arithmetic

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**37** **The inverse of f(x) = x - 7 is**

- **A** $f^{-1}(x) = x + 7$
- **B** $f^{-1}(x) = x - 7$
- **C** $f^{-1}(x) = -x + 7$
- **D** $f^{-1}(x) = 7x$

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**38** **The reference angle for 210° is**

- **A** 30°
- **B** 60°
- **C** 150°
- **D** 210°

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**39** **The midpoint of (0, 4) and (6, 10) is**

- A (6, 14)
- B (0, 4)
- C (3, 7)
- D (3, 3)

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**40** **The sum of $1 + \frac{1}{3} + \frac{1}{9} + \text{cdots}$ to infinity is**

- A 1
- B 3
- C $\frac{3}{2}$
- D 2

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41 **A graph passes the vertical line test. This means the graph represents**

A. A circle

B. A relation only

C. A function

D. No relation

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42 **The period of y = sin(3x) is**

A. $\pi$

B. $3\pi$

C. $6\pi$

D. $\frac{2\pi}{3}$

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**43** The focus of $x^2 = 8y$ is

- A (0, 2)
- B (2, 0)
- C (-2, 0)
- D (0, -2)

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**44** $\lim_{x \to 1} (x^3 + 2)$ is

- A 3
- B 2
- C 1
- D 4

Understand It with Pulse | Flag a mistake

**45** The vertex of $y = (x + 2)^2 - 5$ is

- A (-2, -5)
- B (2, -5)
- C (-2, 5)
- D (2, 5)

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**46** The value of sin 45° is

- A $\frac{\sqrt{2}}{2}$
- B $\frac{1}{2}$
- C $\frac{\sqrt{3}}{2}$
- D 1

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**47** The vertices of $\frac{x^2}{16} + \frac{y^2}{49} = 1$ on the major axis are

- A (0, ± 4)
- B (± 4, 0)
- C (± 7, 0)
- D (0, ± 7)

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**48** If $a_1 = 3$ and $d = 4$, then $a_3$ is

- A 7
- B 9
- C 12
- D 11

Understand It with Pulse | Flag a mistake

**49** The domain of $f(x) = \sqrt{x + 5}$ is

- A $x > 5$
- B $x < -5$
- C $x \geq -5$
- D $x \leq -5$

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**50** In Quadrant IV, sine is

- A Positive
- B Zero
- C Undefined
- D Negative

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# ANSWER KEY

1. B
2. B
3. B
4. A
5. B
6. A
7. B
8. B
9. C
10. D
11. A
12. A
13. C
14. C
15. D
16. D
17. 5
18. B
19. D
20. D
21. A
22. 4
23. C
24. 30
25. C
26. D
27. 10
28. C
29. C
30. B
31. A
32. A
33. B
34. B
35. D
36. D
37. A
38. A
39. C
40. C
41. C
42. D
43. A
44. A
45. A
46. A
47. D
48. D
49. C
50. D

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