ARIZONA 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 g(x) = 4 - 5x, then g(-3) is**

- A 19
- B -11
- C -19
- D 11

Understand It with Pulse | Flag a mistake

2 **The value of cos 2π/3 is**

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

Understand It with Pulse | Flag a mistake

3 The radius of $(x - 2)^2 + (y + 1)^2 = 25$ is

- A 25
- B 5
- C 2
- D 10

Understand It with Pulse | Flag a mistake

4 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

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

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

Understand It with Pulse | Flag a mistake

6 **The value of sin 210° is**

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

Understand It with Pulse | Flag a mistake

7 For $x^2/25 + y^2/9 = 1$, the foci are

- A (± 5, 0)
- B (± 3, 0)
- C (0, ± 4)
- D (± 4, 0)

Understand It with Pulse | Flag a mistake

8 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

9 **The inverse of f(x) = 2x + 6 is**

- **A** $f^{-1}(x) = x/2 + 6$
- **B** $f^{-1}(x) = x - 6/2$
- **C** $f^{-1}(x) = 2x - 6$
- **D** $f^{-1}(x) = x + 6/2$

Understand It with Pulse | Flag a mistake

10 **For y = 2cos(x - π/3), the phase shift is**

- **A** 2 to the right
- **B** π to the right
- **C** π/3 to the left
- **D** π/3 to the right

Understand It with Pulse | Flag a mistake

11 The vertex of $(y - 2)^2 = 12(x + 1)$ is

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

Understand It with Pulse | Flag a mistake

12 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

13 **The function $f(x) = x^3 - 4x$ is**

A odd

B even

C neither even nor odd

D both even and odd

Understand It with Pulse | Flag a mistake

14 **The solutions of $\cos x = -1/2$ for $0 \leq x < 2\pi$ are**

A $x = 5\pi/6, 7\pi/6$

B $x = \pi/3, 5\pi/3$

C $x = 2\pi/3, 4\pi/3$

D $x = \pi/3, 2\pi/3$

Understand It with Pulse | Flag a mistake

15 The circle $x^2 + y^2 - 6x + 4y - 12 = 0$ has center

- A (-3, -2)
- B (3, -2)
- C (3, 2)
- D (-3, 2)

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

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

A 15

B 9

C 21

D 13

Understand It with Pulse | Flag a mistake

18 **For $y = \cos 3x$, the period is**

A 3π

B $2\pi/3$

C $\pi/3$

D 2π

Understand It with Pulse | Flag a mistake

19 For $y^2/9 - x^2/4 = 1$, the vertices are

- A (± 3, 0)
- B (± 2, 0)
- C (0, ± 3)
- D (0, ± 2)

Understand It with Pulse | Flag a mistake

20 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

21 **A function passes through (0, 2) and (4, 10). Its slope is**

- **A** 2
- **B** $\frac{1}{2}$
- **C** 3
- **D** 8

Understand It with Pulse | Flag a mistake

22 **In degrees, 120° in radians is**

- **A** 3π/4
- **B** 5π/6
- **C** 2π/3
- **D** π/3

Understand It with Pulse | Flag a mistake

23 **A parabola with vertex (0, 0) and focus (0, 3) has equation**

- **A** $x^2 = 3y$
- **B** $x^2 = 12y$
- **C** $y^2 = 12x$
- **D** $y^2 = 3x$

Understand It with Pulse | Flag a mistake

24 **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

25 If f(x) = x + 4 and g(x) = 2x, then f(g(3)) is

- A 7
- B 12
- C 14
- D 10

Understand It with Pulse | Flag a mistake

26 Two sides are 5 and 7 with included angle 60°. The third side² is

- A 24
- B 109
- C 39
- D 74

Understand It with Pulse | Flag a mistake

27 **The midpoint of (2, 8) and (6, 4) is**

A (6, 4)

B (4, 4)

C (4, 6)

D (2, 6)

Understand It with Pulse | Flag a mistake

28 **The infinite sum 10 + 5 + 5/2 + cdots is**

A 25

B 15

C 20

D 30

Understand It with Pulse | Flag a mistake

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

ANSWER _____

Understand It with Pulse | Flag a mistake

30 **The value of $\cos 2\pi$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

31 **The center of $(x + 4)^2 + (y - 3)^2 = 16$ is**

A (4, -3)

B (-4, -3)

C (-4, 3)

D (4, 3)

Understand It with Pulse | Flag a mistake

32 The limit as x approaches 5 of $x^2 - 25/x - 5$ is

- A 25
- B 0
- C 10
- D 5

Understand It with Pulse | Flag a mistake

33 If $h(x) = x^2 + 2x$, then h(-1) is

- A 3
- B -1
- C -3
- D 1

Understand It with Pulse | Flag a mistake

34 The value of sin π/3 is

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

Understand It with Pulse | Flag a mistake

35 For $y^2 = 8x$, the directrix is

- A y = 2
- B y = -2
- C x = 2
- D x = -2

Understand It with Pulse | Flag a mistake

36 **The limit as x approaches 4 of x^2 - 16/x - 4 is**

ANSWER

Understand It with Pulse | Flag a mistake

37 **The range of $f(x) = -x^2 + 6$ is**

A $y \leq 6$

B $y \leq 0$

C $y \geq 6$

D $y \geq 0$

Understand It with Pulse | Flag a mistake

38 For y = 2sin x, the amplitude is

- A 2
- B 2π
- C 1
- D 4

Understand It with Pulse | Flag a mistake

39 For $x^2/9 - y^2/16 = 1$, the value of c is

- A 7
- B 4
- C 3
- D 5

Understand It with Pulse | Flag a mistake

40 The sum $\sum_{k=1}^{4} 2k$ is

- A 20
- B 16
- C 10
- D 24

Understand It with Pulse | Flag a mistake

41 The graph of $y = x^2$ shifted right 2 and down 5 is

- A $y = (x - 2)^2 - 5$
- B $y = (x - 2)^2 + 5$
- C $y = (x + 2)^2 + 5$
- D $y = (x + 2)^2 - 5$

Understand It with Pulse | Flag a mistake

42 **The identity $\cos^2 x$ equals**

- **A** $1/\sin^2 x$
- **B** $1 - \sin^2 x$
- **C** $\sin^2 x - 1$
- **D** $1 + \sin^2 x$

Understand It with Pulse | Flag a mistake

43 **The midpoint of (-1, 3) and (5, 7) is**

- **A** (2, 5)
- **B** (5, 5)
- **C** (2, 2)
- **D** (3, 2)

Understand It with Pulse | Flag a mistake

44 **The sum of the first six terms of 2, 6, 10, … is**

ANSWER _____

Understand It with Pulse | Flag a mistake

45 **If f(x) = 2x + 3 and g(x) = x - 1, then g(f(2)) is**

A 10

B 4

C 8

D 6

Understand It with Pulse | Flag a mistake

46 **In degrees, π/3 radians is**

- **A** 60°
- **B** 30°
- **C** 45°
- **D** 90°

Understand It with Pulse | Flag a mistake

47 **For $x^2/64 + y^2/36 = 1$, the minor axis length is**

ANSWER _____

Understand It with Pulse | Flag a mistake

48 The limit of 3n/2n + 1 as n approaches infinity is

- A 0
- B $\frac{3}{2}$
- C 1
- D 3

Understand It with Pulse | Flag a mistake

49 If f(x) = 6 - 2x, then the value of x for which f(x) = 0 is

ANSWER _____

Understand It with Pulse | Flag a mistake

50 The value of sin π/2 is

ANSWER _____

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. A
2. C
3. B
4. A
5. A
6. D
7. D
8. B
9. B
10. D
11. D
12. C
13. A
14. C
15. B
16. B
17. D
18. B
19. C
20. D
21. A
22. C
23. B
24. C
25. D
26. C
27. C
28. C
29. 13
30. 1
31. C
32. C
33. B
34. A
35. D
36. 8
37. A
38. A
39. D
40. A
41. A
42. B
43. A
44. 72
45. D
46. A
47. 12
48. B
49. 3
50. 1

© 2026 Brett Robbins. All Rights Reserved.