CONNECTICUT 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 **The graph of $y = 3(x - 1)^2 + 5$ is the graph of $y = x^2$ shifted**

- A left and down
- B right only
- C up only
- D right and up

Understand It with Pulse | Flag a mistake

2 **The sin 45° is**

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

Understand It with Pulse | Flag a mistake

3 **The vertex of the parabola $y = (x + 1)^2 + 4$ is**

A (1, 4)

B (-1, 4)

C (-1, -4)

D (0, 0)

Understand It with Pulse | Flag a mistake

4 **As x approaches 5 , the value of 3x -1 approaches**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **The graph of $y = 2(x - 4)^2 + 1$ is the graph of $y = x^2$ shifted**

- A right and up
- B left and down
- C right only
- D up only

Understand It with Pulse | Flag a mistake

6 **The sin 90° is**

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

Understand It with Pulse | Flag a mistake

7 An ellipse centered at (0, 0) has semi major axis 5 and semi minor axis 3. Its major axis length is

- A 6
- B 10
- C 8
- D 3

Understand It with Pulse | Flag a mistake

8 As x approaches 3 , the value of $x^2 + 2$ approaches

ANSWER _____

Understand It with Pulse | Flag a mistake

9 For $f(x) = x^3$, f(4) is

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **The cos 30° is**

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

Understand It with Pulse | Flag a mistake

11 **An ellipse centered at (2, -1) has semi major axis 5 and semi minor axis 3. Its major axis length is**

- **A** 10
- **B** 6
- **C** 8
- **D** 3

Understand It with Pulse | Flag a mistake

12 **As x approaches 2 , the value of $x^2 + 4$ approaches**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **For f(x) = 2x + 1 , f(3) is**

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **A central angle of 180 degrees measures, in radians,**

A 2π

B $\pi/2$

C π

D $3\pi/2$

Understand It with Pulse | Flag a mistake

15 **A circle with radius 3 has diameter**

ANSWER _____

Understand It with Pulse | Flag a mistake

16 **An arithmetic sequence starts at 5 with common difference 2. Its 4th term is**

ANSWER _____

Understand It with Pulse | Flag a mistake

17 **For f(x) = 4x + 1 , f(2) is**

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **A central angle of 45 degrees measures, in radians,**

- A: π
- B: $\pi/4$
- C: 2π
- D: $\pi/2$

Understand It with Pulse | Flag a mistake

19 **A circle centered at (2, 3) with radius 5 has equation**

- A: $(x + 2)^2 + (y + 3)^2 = 5$
- B: $(x - 2)^2 + (y - 3)^2 = 5$
- C: $x^2 + y^2 = 25$
- D: $(x - 2)^2 + (y - 3)^2 = 25$

Understand It with Pulse | Flag a mistake

20 **A geometric sequence starts at 2 with common ratio 2. Its 4th term is**

ANSWER _____

Understand It with Pulse | Flag a mistake

21 **The vertex of $y = (x + 1)^2 + 4$ is**

A (-1, 4)

B (1, 4)

C (-1, -4)

D (0, 0)

Understand It with Pulse | Flag a mistake

22 The amplitude of $y = 2 \sin x$ is

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

Understand It with Pulse | Flag a mistake

23 A circle centered at (4, -2) with radius 6 has equation

- A $(x + 4)^2 + (y + -2)^2 = 6$
- B $(x - 4)^2 + (y - -2)^2 = 6$
- C $(x - 4)^2 + (y - -2)^2 = 36$
- D $x^2 + y^2 = 36$

Understand It with Pulse | Flag a mistake

24 A geometric sequence starts at 5 with common ratio 2. Its 3th term is

ANSWER _____

Understand It with Pulse | Flag a mistake

25 For f(x) = 2x + 3 , the value at x = 0 is

ANSWER _____

Understand It with Pulse | Flag a mistake

26 For y = sin 2x , the coefficient of x is

ANSWER _____

Understand It with Pulse | Flag a mistake

27 For a hyperbola with a = 5 and b = 12 , $c^2 = a^2 + b^2$, so c is

ANSWER _____

Understand It with Pulse | Flag a mistake

28 **The sum of the first 4 positive integers, multiplied by 3, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

29 **For f(x) = 4x + 1 , the value at x = 0 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

30 **For y = sin 4x , the coefficient of x is**

ANSWER _____

Understand It with Pulse | Flag a mistake

31 **A parabola that opens upward has its vertex as a**

- A maximum point
- B minimum point
- C focus
- D directrix

Understand It with Pulse | Flag a mistake

32 **The sequence 1 , $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, and so on , converges to**

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

Understand It with Pulse | Flag a mistake

33 The $\sqrt{25}$ is

ANSWER

Understand It with Pulse | Flag a mistake

34 The tan 45° is

A $\sqrt{\frac{3}{3}}$

B $\sqrt{3}$

C 1

D 0

Understand It with Pulse | Flag a mistake

35 **The distance from the vertex to the focus of a parabola is called the**

A focal length

B major axis

C minor axis

D radius

Understand It with Pulse | Flag a mistake

36 **A geometric series with ratio between -1 and 1**

A converges

B diverges

C oscillates without limit

D is undefined

Understand It with Pulse | Flag a mistake

37 The $\sqrt{64}$ is

ANSWER

Understand It with Pulse | Flag a mistake

38 The tan 90° is

A $\sqrt{\frac{3}{3}}$

B undefined

C 1

D $\sqrt{3}$

Understand It with Pulse | Flag a mistake

39 An ellipse has major axis length 6. Its semi major axis is

ANSWER

Understand It with Pulse | Flag a mistake

40 **A geometric sequence has first term 3 and common ratio 2. Its second term is**

ANSWER _____

Understand It with Pulse | Flag a mistake

41 **For $f(x) = x^2 + 2$, $f(5)$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

42 **A point on the terminal side of an angle is (8, 15). The sine of the angle is**

A $\frac{15}{17}$

B $\frac{8}{17}$

C $\frac{15}{8}$

D $\frac{8}{15}$

Understand It with Pulse | Flag a mistake

43 The point used with the directrix to define a parabola is the

- A vertex
- B center
- C axis
- D focus

Understand It with Pulse | Flag a mistake

44 An arithmetic sequence has first term 5 and common difference 3. Its second term is

ANSWER _____

Understand It with Pulse | Flag a mistake

45 **The function $f(x) = x^2$ is**

- **A** odd
- **B** neither
- **C** both even and odd
- **D** even

Understand It with Pulse | Flag a mistake

46 **A point on the terminal side of an angle is (3, 4). The cosine of the angle is**

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

Understand It with Pulse | Flag a mistake

47 **A hyperbola has two**

A vertices only

B centers

C branches

D directrices only

Understand It with Pulse | Flag a mistake

48 **An arithmetic sequence has first term 3 and common difference 6. Its second term is**

ANSWER _____

Understand It with Pulse | Flag a mistake

49 **The function f(x) = x + 1 is**

- A even
- B odd
- C neither
- D both even and odd

Understand It with Pulse | Flag a mistake

50 **A point on the terminal side of an angle is (6, 8). The cosine of the angle is**

- A $\frac{8}{10}$
- B $\frac{6}{8}$
- C $\frac{6}{10}$
- D $\frac{8}{6}$

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	D	**18.**	B	**35.**	A
2.	B	**19.**	D	**36.**	A
3.	B	**20.**	16	**37.**	8
4.	14	**21.**	A	**38.**	B
5.	A	**22.**	C	**39.**	3
6.	A	**23.**	C	**40.**	6
7.	B	**24.**	20	**41.**	27
8.	11	**25.**	3	**42.**	A
9.	64	**26.**	2	**43.**	D
10.	D	**27.**	13	**44.**	8
11.	A	**28.**	30	**45.**	D
12.	8	**29.**	1	**46.**	D
13.	7	**30.**	4	**47.**	C
14.	C	**31.**	B	**48.**	9
15.	6	**32.**	B	**49.**	C
16.	11	**33.**	5	**50.**	C
17.	9	**34.**	C		

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