DELAWARE 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 **For $f(x) = 0x^2 + 5x + 2$, find $f(-2)$.**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **In a right triangle, the side opposite an acute angle is 9, the adjacent side is 12, and the hypotenuse is 15. The tangent of the angle is**

A $\frac{12}{9}$

B $\frac{9}{15}$

C $\frac{9}{12}$

D $\frac{12}{15}$

Understand It with Pulse | Flag a mistake

3 **A circle has radius 3. Its area is**

- A 6π
- B 3π
- C 9π
- D 18π

Understand It with Pulse | Flag a mistake

4 **Find the sum of the first 4 terms of an arithmetic series with first term 4 and common difference 3.**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **The inverse of f(x) = 3x + 3 evaluated at 6 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **The value of sin 60° is**

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

Understand It with Pulse | Flag a mistake

7 **A circle has radius 8 and a central angle of 60°. The arc length is**

- **A** 8π
- **B** 2.67π
- **C** 3.67π
- **D** 1.33π

Understand It with Pulse | Flag a mistake

8 **Find the limit as x approaches 4 of $\frac{x^2 - 16}{x - 4}$.**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **The graph of $y = x^2$, shifted 3 units right and 1 units down has equation**

A $y = x^2$

B $y = (x + 1)^2$

C $y = (x - 3)^2 - 1$

D $y = x^2 + 1$

Understand It with Pulse | Flag a mistake

10 **In a 45-45-90 triangle, each leg is 4. The hypotenuse is**

- A 8
- B $4\sqrt{2}$
- C $4\sqrt{3}$
- D 4

Understand It with Pulse | Flag a mistake

11 **A circle has radius 5. Its circumference is**

- A 5π
- B 10π
- C 25π
- D 7π

Understand It with Pulse | Flag a mistake

12 **A geometric sequence starts with 2 and has common ratio 3. The 5 term is**

ANSWER _____

Understand It with Pulse | Flag a mistake

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

A (3, 3)

B (-3, 3)

C (-3, -3)

D (0, 0)

Understand It with Pulse | Flag a mistake

14 In a right triangle, the side opposite an acute angle is 5, the adjacent side is 12, and the hypotenuse is 13. The tangent of the angle is

- **A** $\frac{12}{5}$
- **B** $\frac{5}{13}$
- **C** $\frac{5}{12}$
- **D** $\frac{12}{13}$

Understand It with Pulse | Flag a mistake

15 The vertex of $y = (x - -2)^2 + -2$ is

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

Understand It with Pulse | Flag a mistake

16 **Find the sum of the first 5 terms of an arithmetic series with first term 1 and common difference 2.**

ANSWER _____

Understand It with Pulse | Flag a mistake

17 **For $f(x) = -1x^2 + -5x + 2$, find $f(-3)$.**

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **The period of $y = \sin 3x$ is**

A 2π

B $2\pi/3$

C π

D 3π

Understand It with Pulse | Flag a mistake

19 **A circle has center (0, -3) and radius 3. Its equation is**

- **A** $x^2 + (y + 3)^2 = 9$
- **B** $x^2 + y^2 = 9$
- **C** $x^2 + (y + 3)^2 = 3$
- **D** $x^2 + y^2 = 3$

Understand It with Pulse | Flag a mistake

20 **Find the sum of the first 5 terms of an arithmetic series with first term 2 and common difference 3.**

ANSWER _____

Understand It with Pulse | Flag a mistake

21 **The graph of $y = x^2$, shifted 4 units left and 3 units up has equation**

A $y = (x + 4)^2 + 3$

B $y = x^2$

C $y = (x + 1)^2$

D $y = x^2 + 1$

Understand It with Pulse | Flag a mistake

22 **The amplitude of $y = 4\sin x$ is**

A 5

B 3

C 4

D 8

Understand It with Pulse | Flag a mistake

23 A circle has radius 7. Its circumference is

- **A** 7π
- **B** 49π
- **C** 9π
- **D** 14π

Understand It with Pulse | Flag a mistake

24 Find the limit as x approaches 0 of $1x^2 + 3$.

ANSWER _____

Understand It with Pulse | Flag a mistake

25 **The graph of $y = x^2$, shifted 3 units left and 0 units down has equation**

A $y = x^2$

B $y = (x + 3)^2 + 0$

C $y = (x + 1)^2$

D $y = x^2 + 1$

Understand It with Pulse | Flag a mistake

26 **In a 45-45-90 triangle, each leg is 5. The hypotenuse is**

A 10

B $5\sqrt{3}$

C 5

D $5\sqrt{2}$

Understand It with Pulse | Flag a mistake

27 **A circle has radius 6. Its area is**

- A 12π
- B 6π
- C 72π
- D 36π

Understand It with Pulse | Flag a mistake

28 **A geometric sequence starts with 2 and has common ratio 3. The 4 term is**

ANSWER _____

Understand It with Pulse | Flag a mistake

29 **The vertex of the parabola $y = (x - -2)^2 + -2$ is**

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

Understand It with Pulse | Flag a mistake

30 **In a 30-60-90 triangle, the shortest side is 3. The hypotenuse is**

- A 8
- B 6
- C 3
- D 4

Understand It with Pulse | Flag a mistake

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

- A (-1, -2)
- B (1, 2)
- C (0, 0)
- D (1, -2)

Understand It with Pulse | Flag a mistake

32 Find the limit as x approaches -3 of $4x^2 + 3$.

ANSWER _____

Understand It with Pulse | Flag a mistake

33 For $f(x) = x^2 + -2x + 2$, find $f(-3)$.

ANSWER _____

Understand It with Pulse | Flag a mistake

34 In a right triangle, the side opposite an acute angle is 3, the adjacent side is 4, and the hypotenuse is 5. The tangent of the angle is

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

Understand It with Pulse | Flag a mistake

35 The vertex of $y = (x - -3)^2 + -1$ is

- **A** (-3, -1)
- **B** (3, -1)
- **C** (-3, 1)
- **D** (0, 0)

Understand It with Pulse | Flag a mistake

36 **Find the limit as x approaches 1 of $1x^2 + 3$.**

ANSWER _____

Understand It with Pulse | Flag a mistake

37 **The graph of $y = x^2$, shifted 2 units left and 1 units up has equation**

A $y = (x + 2)^2 + 1$

B $y = x^2$

C $y = (x + 1)^2$

D $y = x^2 + 1$

Understand It with Pulse | Flag a mistake

38 The value of cos 30° is

A 1

B $\sqrt{\frac{2}{2}}$

C $\frac{1}{2}$

D $\sqrt{\frac{3}{2}}$

Understand It with Pulse | Flag a mistake

39 A circle has center (-3, 2) and radius 2. Its equation is

A $(x + 3)^2 + (y - 2)^2 = 4$

B $x^2 + y^2 = 4$

C $(x + 3)^2 + (y - 2)^2 = 2$

D $x^2 + y^2 = 2$

Understand It with Pulse | Flag a mistake

40 **A geometric sequence starts with 2 and has common ratio 2. The 5 term is**

ANSWER _____

Understand It with Pulse | Flag a mistake

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

A (1, 2)

B (-1, -2)

C (0, 0)

D (-1, 2)

Understand It with Pulse | Flag a mistake

42 **In a 45-45-90 triangle, each leg is 7. The hypotenuse is**

- A 14
- B $7\sqrt{3}$
- C 7
- D $7\sqrt{2}$

Understand It with Pulse | Flag a mistake

43 **A circle has center (-4, 4) and radius 2. Its equation is**

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

Understand It with Pulse | Flag a mistake

44 **A geometric sequence starts with 1 and has common ratio 2. The 5 term is**

ANSWER _____

Understand It with Pulse | Flag a mistake

45 **The inverse of f(x) = 2x + 5 evaluated at 15 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

46 **In a right triangle, the side opposite an acute angle is 6, the adjacent side is 8, and the hypotenuse is 10. The sine of the angle is**

A $\frac{6}{10}$

B $\frac{8}{10}$

C $\frac{6}{8}$

D $\frac{10}{6}$

Understand It with Pulse | Flag a mistake

47 A circle has radius 8 and a central angle of 90°. The arc length is

- **A** 4π
- **B** 8π
- **C** 5π
- **D** 2π

Understand It with Pulse | Flag a mistake

48 A geometric sequence starts with 3 and has common ratio 3. The 5 term is

ANSWER _____

Understand It with Pulse | Flag a mistake

49 For $f(x) = -1x^2 + 3x + 2$, find $f(3)$.

ANSWER _____

Understand It with Pulse | Flag a mistake

50 **In a 45-45-90 triangle, each leg is 2. The hypotenuse is**

- **A** 4
- **B** $2\sqrt{3}$
- **C** 2
- **D** $2\sqrt{2}$

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	-8	**18.**	B	**35.**	A
2.	C	**19.**	A	**36.**	4
3.	C	**20.**	40	**37.**	A
4.	34	**21.**	A	**38.**	D
5.	1	**22.**	C	**39.**	A
6.	C	**23.**	D	**40.**	32
7.	B	**24.**	3	**41.**	D
8.	8	**25.**	B	**42.**	D
9.	C	**26.**	D	**43.**	B
10.	B	**27.**	D	**44.**	16
11.	B	**28.**	54	**45.**	5
12.	162	**29.**	A	**46.**	A
13.	B	**30.**	B	**47.**	A
14.	C	**31.**	D	**48.**	243
15.	A	**32.**	39	**49.**	2
16.	25	**33.**	17	**50.**	D
17.	8	**34.**	C		

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