IOWA PRECALCULUS · UNIT 3 · 25 QUESTIONS

Analytic Geometry and Conics — 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 vertex of $y = (x - 2)^2 - 5$ is**

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

Understand It with Pulse | Flag a mistake

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

- A upward
- B downward
- C to the right
- D to the left

Understand It with Pulse | Flag a mistake

3 **The focus of $y^2 = 12x$ is**

- A (3, 0)
- B (0, 3)
- C (-3, 0)
- D (12, 0)

Understand It with Pulse | Flag a mistake

4 The focus of $x^2 = 8y$ is

- A (2, 0)
- B (0, 2)
- C (0, 8)
- D (8, 0)

Understand It with Pulse | Flag a mistake

5 The directrix of $x^2 = -16y$ is

- A $y = -4$
- B $y = 4$
- C $x = 4$
- D $x = -4$

Understand It with Pulse | Flag a mistake

6 **The focus of $(x - 1)^2 = 8(y - 2)$ is**

A (1, 4)

B (1, 0)

C (3, 2)

D (-1, 2)

Understand It with Pulse | Flag a mistake

7 **The directrix of $(x - 1)^2 = 8(y - 2)$ is**

A y = 0

B y = 4

C y = 2

D x = -1

Understand It with Pulse | Flag a mistake

8 **The center of $(x - 3)^2 + (y + 2)^2 = 25$ is**

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

Understand It with Pulse | Flag a mistake

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

- A 25
- B 5
- C 10
- D $\sqrt{5}$

Understand It with Pulse | Flag a mistake

10 The center of $x^2 + y^2 + 6x - 8y + 9 = 0$ is

- A (-3, 4)
- B (3, -4)
- C (-3, -4)
- D (3, 4)

Understand It with Pulse | Flag a mistake

11 The radius of $x^2 + y^2 + 6x - 8y + 9 = 0$ is

- A 3
- B 4
- C 9
- D 16

Understand It with Pulse | Flag a mistake

12 For $\frac{x^2}{25} + \frac{y^2}{9} = 1$, the foci are

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

Understand It with Pulse | Flag a mistake

13 For $\frac{x^2}{25} + \frac{y^2}{9} = 1$, the major vertices are

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

Understand It with Pulse | Flag a mistake

14 For $\frac{x^2}{25} + \frac{y^2}{9} = 1$, the eccentricity is

A $\frac{3}{5}$

B $\frac{4}{5}$

C $\frac{5}{4}$

D $\frac{9}{25}$

Understand It with Pulse | Flag a mistake

15 The asymptotes of $\frac{x^2}{16} - \frac{y^2}{9} = 1$ are

A $y = \pm \frac{3}{4}x$

B $y = \pm \frac{4}{3}x$

C $y = \pm \frac{9}{16}x$

D $y = \pm \frac{16}{9}x$

Understand It with Pulse | Flag a mistake

16 The vertices of $\frac{y^2}{25} - \frac{x^2}{16} = 1$ are

A (± 4, 0)

B (0, ± 4)

C (± 5, 0)

D (0, ± 5)

Understand It with Pulse | Flag a mistake

17 The transverse axis length of $\frac{x^2}{16} - \frac{y^2}{9} = 1$ is

A 3

B 4

C 6

D 8

Understand It with Pulse | Flag a mistake

18 The distance between (1, 2) and (4, 6) is

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

Understand It with Pulse | Flag a mistake

19 The midpoint of (2, 3) and (6, 7) is

- A (4, 5)
- B (3, 5)
- C (4, 10)
- D (8, 10)

Understand It with Pulse | Flag a mistake

20 **The equation $x^2 + y^2 - 4x + 2y - 4 = 0$ represents a**

- A parabola
- B ellipse
- C circle
- D hyperbola

Understand It with Pulse | Flag a mistake

21 **The center of $(x - 2)^2 + y^2 = 9$ is**

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

Understand It with Pulse | Flag a mistake

22 The radius of $(x - 2)^2 + y^2 = 9$ is ____.

ANSWER _____

Understand It with Pulse | Flag a mistake

23 The value of p for $y^2 = 20x$ is ____.

ANSWER _____

Understand It with Pulse | Flag a mistake

24 For $\frac{x^2}{36} + \frac{y^2}{16} = 1$, the minor axis length is ____.

ANSWER _____

Understand It with Pulse | Flag a mistake

25 The length of the latus rectum of $y^2 = 12x$ is ____.

ANSWER _____

Understand It with Pulse | Flag a mistake

ANSWER KEY

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

© 2026 Brett Robbins. All Rights Reserved.