ALASKA 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 $y = (x + 3)^2 + 4$ is**

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

Understand It with Pulse | Flag a mistake

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

A downward

B upward

C to the right

D to the left

Understand It with Pulse | Flag a mistake

**3** The focus of $y^2 = 16x$ is



A (0, 4)

B (-4, 0)

C (4, 0)

D (16, 0)

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

**5** The directrix of $x^2 = 20y$ is

- A y = 5
- B y = -5
- C x = 5
- D x = -5

Understand It with Pulse | Flag a mistake

**6** **The focus of $(x - 2)^2 = 12(y + 1)$ is**



A (2, 2)

B (2, -4)

C (5, -1)

D (-1, -1)

Understand It with Pulse | Flag a mistake

7 **The directrix of $(x - 2)^2 = 12(y + 1)$ is**

A $y = 2$

B $y = -4$

C $y = -1$

D $x = -1$

Understand It with Pulse | Flag a mistake

**8** The center of $(x + 1)^2 + (y - 3)^2 = 36$ is



A (-1, -3)

B (1, 3)

C (1, -3)

D (-1, 3)

Understand It with Pulse | Flag a mistake

**9** **The radius of $(x + 1)^2 + (y - 3)^2 = 36$ is**

- A 36
- B 18
- C 6
- D 12

Understand It with Pulse | Flag a mistake

**10** **The center of $x^2 + y^2 - 4x + 10y - 7 = 0$ is**

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

Understand It with Pulse | Flag a mistake

**11** The radius of $x^2 + y^2 - 4x + 10y - 7 = 0$ is

- **A** 36
- **B** 6
- **C** 7
- **D** 5

Understand It with Pulse | Flag a mistake

**12** For $\frac{x^2}{49} + \frac{y^2}{16} = 1$, the foci are

- **A** $(\pm\sqrt{33}, 0)$
- **B** $(\pm 7, 0)$
- **C** $(0, \pm\sqrt{33})$
- **D** $(\pm 4, 0)$

Understand It with Pulse | Flag a mistake

**13** For $\frac{x^2}{49} + \frac{y^2}{16} = 1$, the major vertices are

A $(\pm 4, 0)$

B $(\pm 7, 0)$

C $(0, \pm 7)$

D $(\pm\sqrt{33}, 0)$

Understand It with Pulse | Flag a mistake

**14** For $\frac{x^2}{49} + \frac{y^2}{16} = 1$, the eccentricity is

A $\frac{\sqrt{33}}{7}$

B $\frac{4}{7}$

C $\frac{7}{\sqrt{33}}$

D $\frac{16}{49}$

Understand It with Pulse | Flag a mistake

**15** The asymptotes of $\frac{x^2}{9} - \frac{y^2}{25} = 1$ are

A $y = \pm \frac{5}{3}x$

B $y = \pm \frac{3}{5}x$

C $y = \pm \frac{9}{25}x$

D $y = \pm \frac{25}{9}x$

Understand It with Pulse | Flag a mistake

**16** The vertices of $\frac{y^2}{36} - \frac{x^2}{9} = 1$ are

A $(\pm 3, 0)$

B $(0, \pm 3)$

C $(\pm 6, 0)$

D $(0, \pm 6)$

Understand It with Pulse | Flag a mistake

17 The transverse axis length of $\frac{x^2}{25} - \frac{y^2}{4} = 1$ is

A 5

B 4

C 2

D 10

Understand It with Pulse | Flag a mistake

**18** The distance between (2, 1) and (5, 5) is



A 4

B 7

C 5

D 3

Understand It with Pulse | Flag a mistake

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

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

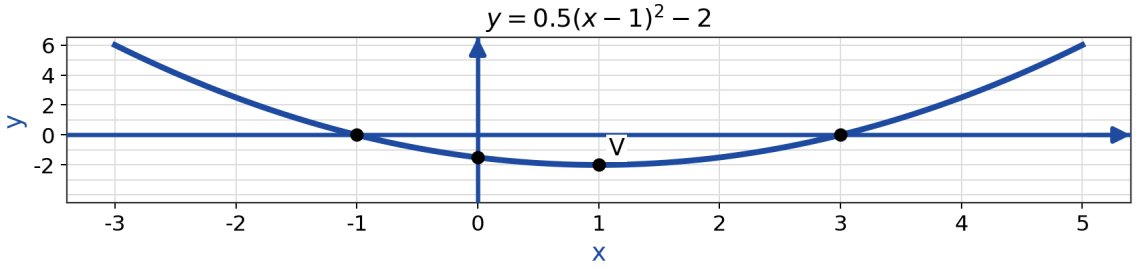
Understand It with Pulse | Flag a mistake

**20** **The equation $9x^2 + 4y^2 = 36$ represents a**

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

Understand It with Pulse | Flag a mistake

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




A (1, 2)

B (-1, -2)

C (1, -2)

D (-1, 2)

Understand It with Pulse | Flag a mistake

**22** The radius of $(x + 5)^2 + y^2 = 49$ equals



ANSWER _____

Understand It with Pulse | Flag a mistake

**23** The value of p for $x^2 = 24y$ equals

ANSWER _____

Understand It with Pulse | Flag a mistake

24 For $\frac{x^2}{64} + \frac{y^2}{36} = 1$, the minor axis length equals

ANSWER

Understand It with Pulse | Flag a mistake

25 The length of the latus rectum of $y^2 = 8x$ equals

ANSWER

Understand It with Pulse | Flag a mistake

# ANSWER KEY

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

© 2026 Brett Robbins. All Rights Reserved.