CALIFORNIA PRECALCULUS · UNIT 3 · 25 QUESTIONS

Conic Sections, Parametric Equations, and Vectors — 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 the parametric equations x = t + 1 and y = 2t - 3, the rectangular equation is**

- **A** y = x - 5
- **B** y = 2x - 5
- **C** y = 2x - 1
- **D** y = 2x + 5

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2 The dot product $\langle 2, 3 \rangle \cdot \langle 4, -1 \rangle$ is

- **A** 14
- **B** 11
- **C** 5
- **D** 2

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3 For $x^2/16 - y^2/9 = 1$, the asymptotes are

- **A** $y = \pm \frac{4}{3x}$
- **B** $y = \pm \frac{3}{4x}$
- **C** $y = \pm \frac{16}{9x}$
- **D** $y = \pm \frac{9}{16x}$

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

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

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5 For $x^2/25 + y^2/9 = 1$, the length of the major axis is

- A 9
- B 10
- C 25
- D 5

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6 **For the parametric equations x = 3t and y = t + 1, the point when t = 2 is**

A (6, 2)

B (2, 3)

C (6, 3)

D (3, 6)

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7 **The center of $(x - 2)^2 + (y + 1)^2 = 9$ is**

A (-2, 1)

B (-2, -1)

C (2, -1)

D (2, 1)

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

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

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9 **The magnitude of the vector langle 3, 4 rangle is**

- A 7
- B 5
- C 12
- D 25

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10 For $x^2/25 + y^2/9 = 1$, the length of the minor axis is

- A 9
- B 3
- C 10
- D 6

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11 For $x^2/16 - y^2/9 = 1$, the vertices are

- A $(0, \pm 3)$
- B $(0, \pm 4)$
- C $(\pm 3, 0)$
- D $(\pm 4, 0)$

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

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

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13 The directrix of $y^2 = 8x$ is

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

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14 The focus of $x^2 = 12y$ is

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

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15 For the parametric equations $x = 2t$ and $y = t^2$, the rectangular equation is

- **A** $y = \frac{x^2}{4}$
- **B** $y = x^2$
- **C** $y = 2x^2$
- **D** $y = \frac{x^2}{2}$

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16 The dot product langle 1, 5 rangle · langle 2, 2 rangle is

- A 12
- B 7
- C 20
- D 10

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17 For $x^2/9 - y^2/25 = 1$, the asymptotes are

- A $y = \pm \frac{25}{9x}$
- B $y = \pm \frac{3}{5x}$
- C $y = \pm \frac{5}{3x}$
- D $y = \pm \frac{9}{25x}$

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18 For $x^2/36 + y^2/16 = 1$, the foci are

- A $(\pm 2\sqrt{5}, 0)$
- B $(\pm 4, 0)$
- C $(0, \pm 2\sqrt{5})$
- D $(\pm 6, 0)$

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19 For $x^2/36 + y^2/16 = 1$, the length of the major axis is

- A 8
- B 6
- C 36
- D 12

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20 For the parametric equations $x = 2t - 1$ and $y = t^2$, the point when $t = 3$ is

- A (5, 3)
- B (6, 9)
- C (2, 9)
- D (5, 9)

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

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

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22 The focus of $y^2 = 12x$ is

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

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23 The magnitude of the vector langle 6, 8 rangle is

- A 10
- B 14
- C 100
- D 48

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24 For the parametric equations $x = t - 2$ and $y = 3t + 1$, the rectangular equation is

- A $y = x + 7$
- B $y = 3x + 7$
- C $y = 3x + 1$
- D $y = 3x - 5$

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25 The dot product $\langle 3, -2 \rangle \cdot \langle 5, 4 \rangle$ is

- A 7
- B -7
- C 23
- D 8

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ANSWER KEY

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

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